

**AFRL-VA-WP-TR-1999-3019**

**AN EXPERIMENTAL INVESTIGATION  
OF TANGENTIAL BLOWING TO  
REDUCE BUFFET RESPONSE OF THE  
VERTICAL TAILS OF AN F-15 WIND  
TUNNEL MODEL**

**VOLUME 2 -- RESPONSE DATA**



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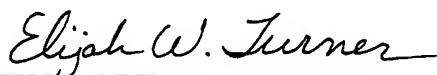
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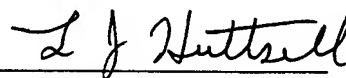
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## FOREWORD

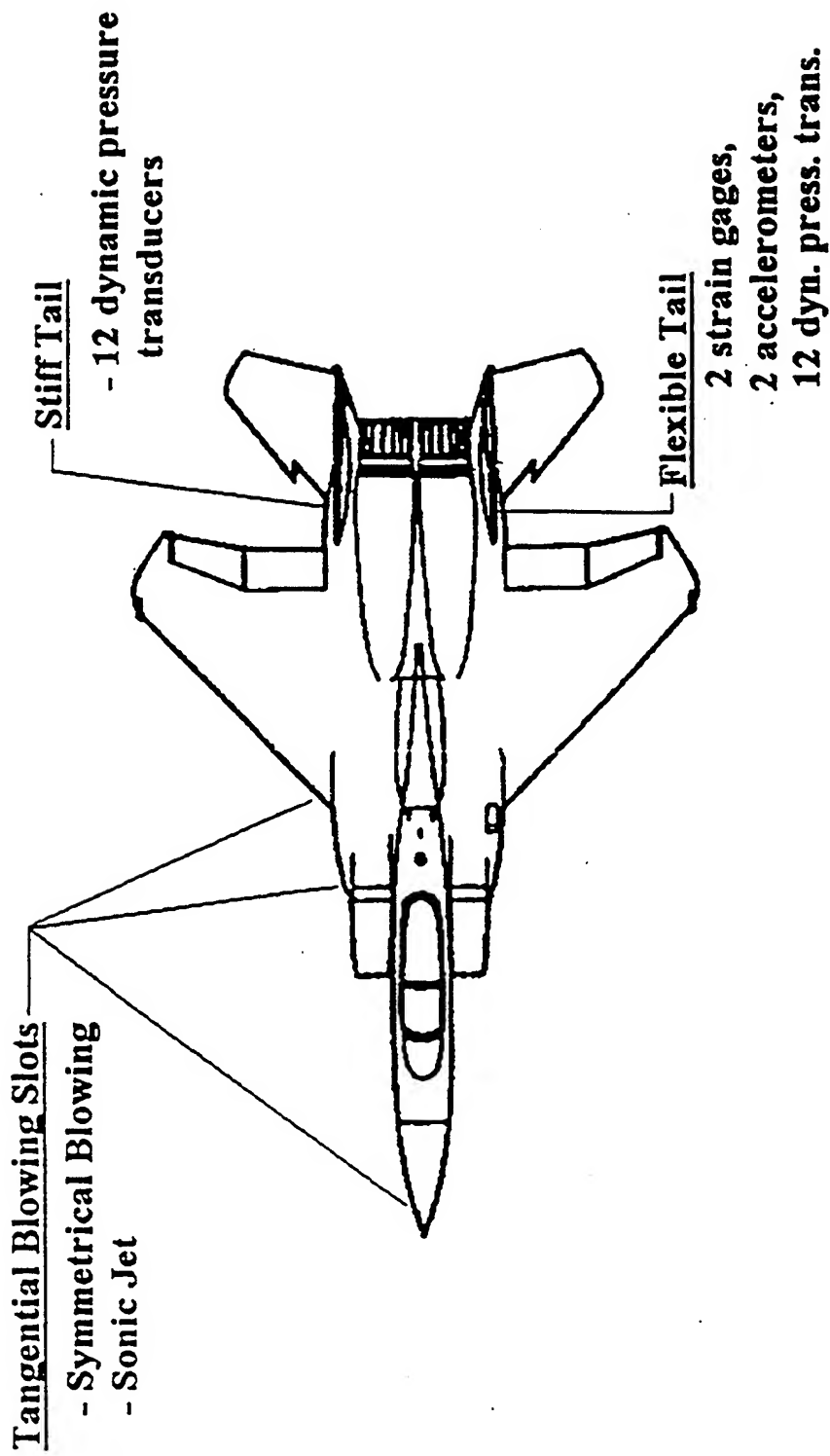
This report was prepared by Dr. Marty Allen Ferman, Consultant for CSA Engineering of Palo Alto, California. The work was performed under Contract F33615-94-3200, Task 3413-31 for the Air Vehicles Directorate of the Air Force Research Laboratory, Wright-Patterson Air Force Base, Ohio. Mr. Elijah W. Turner was the Air Force Project Engineer. This effort was sponsored by the Unsteady Aerodynamics Integrated Product Team (IPT) of the Air Vehicles Directorate, Air Force Research Laboratory. Mr. Lawrence J. Huttshell was Chairman of the IPT.

The work by Dr. Ferman was conducted between 15 June 1996 and 15 October 1998 under job order number 24044951. The data presented in this report were reduced by Mr. Dansen Brown of the Acoustics and Sonic Fatigue Branch, Structures Division, Air Vehicles Directorate, Air Force Research Laboratory from the 4.7% F-15 Vertical Tail Buffet Test.

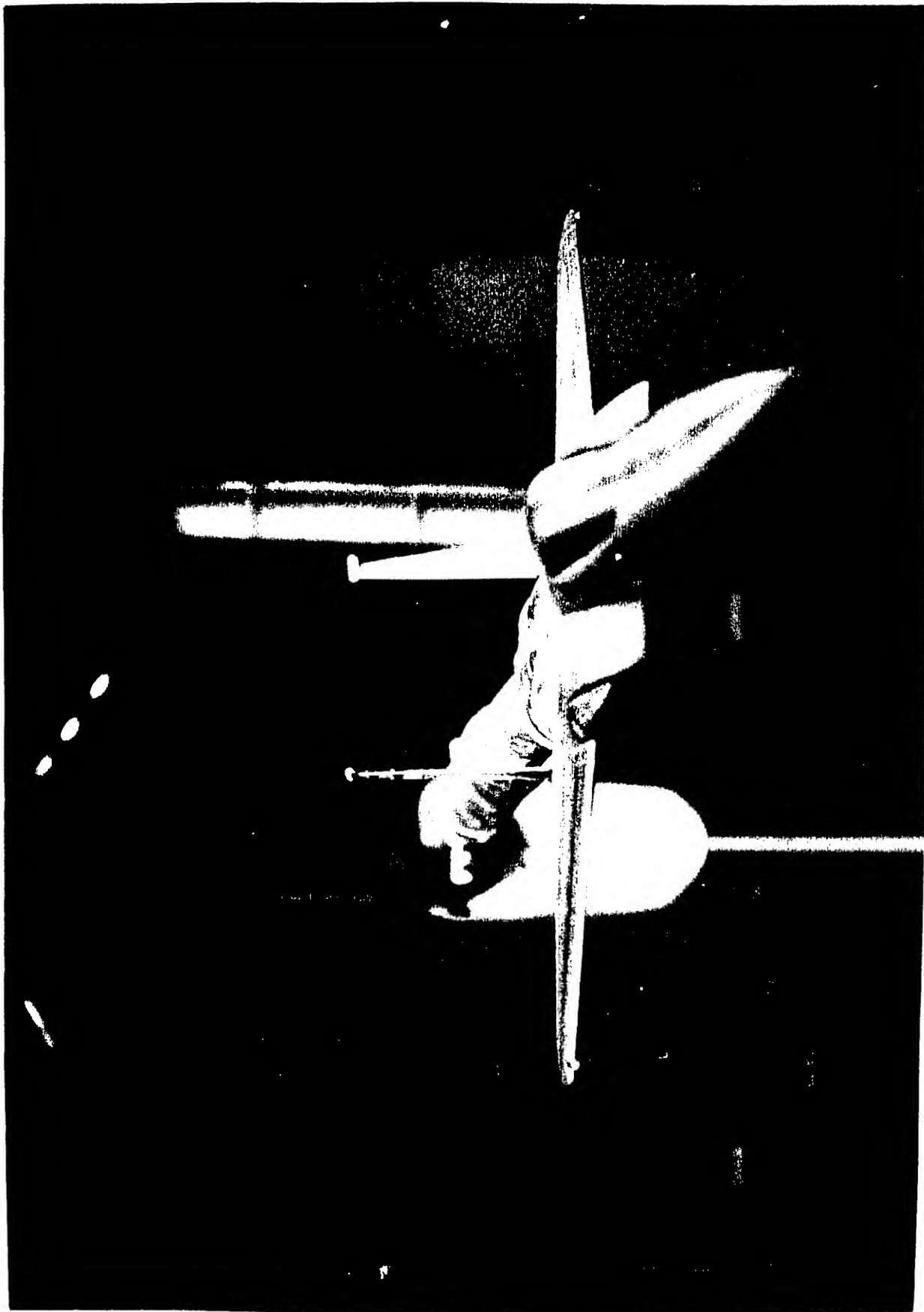
The Buffet Tests were conducted in the Subsonic Aerodynamics Research Laboratory (SARL) wind tunnel at Wright-Patterson Air Force Base in October and November of 1995. The Test Engineer was Mr. Jon Tinapple of the Aerodynamic Configuration Branch, Aeronautical Sciences Division, Air Vehicles Directorate, Air Force Research Laboratory.

This report is Volume 2 of "AN EXPERIMENTAL INVESTIGATION OF TANGENTIAL BLOWING TO REDUCE BUFFET RESPONSE OF THE VERTICAL TAILS OF AN F-15 WIND TUNNEL MODEL. This volume presents the detailed PSD graphs and summary tables of rms response data from those graphs. To aid with the comprehension of this data, figures from Volume 1 (AFRL-VA-WP-TR-3018), showing the model, setup, and model instrumentation are repeated at the beginning of this report. The reader will most likely have to refer to Volume 1 for added tie-in.

This report was submitted in January 1999 for publication as an Air Force Research Laboratory Technical Report.



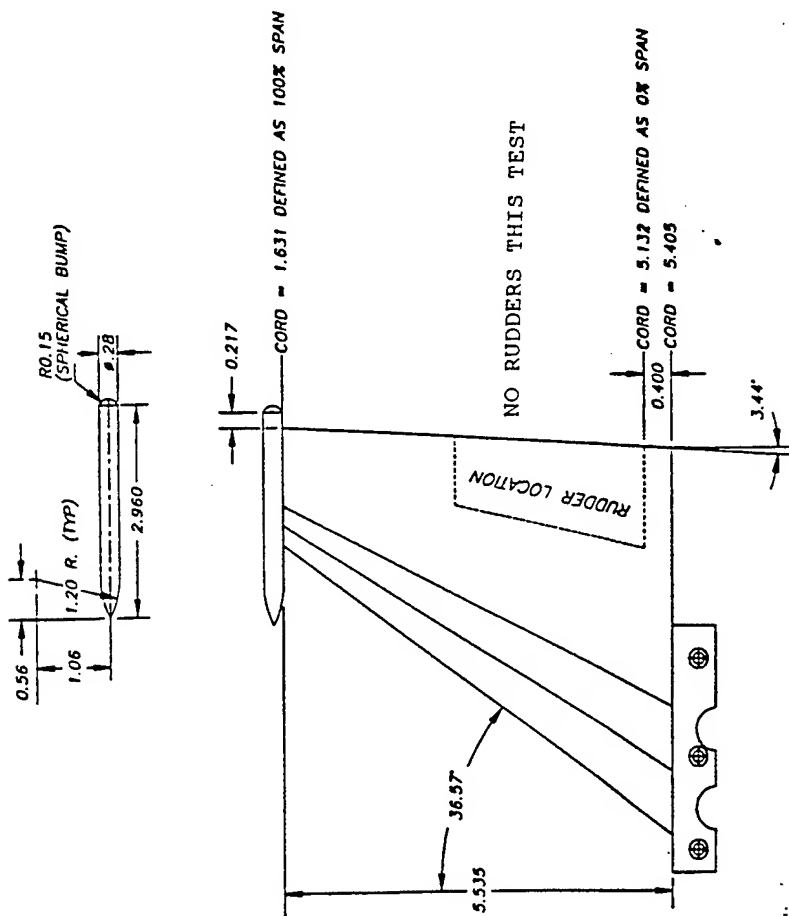
PLANVIEW OF 4.7 % F-15 WIND TUNNEL MODEL



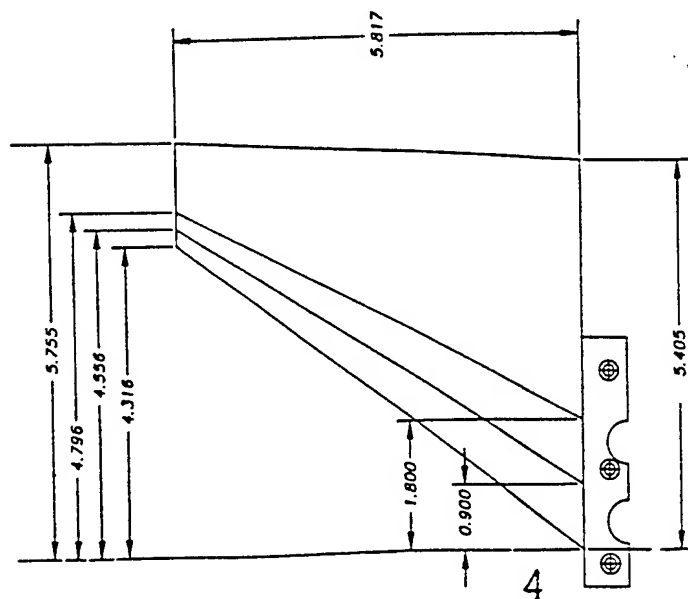
4.7 % BUFFET MODEL IN WIND TUNNEL



4.7 % MODEL - VIEW FROM FLEX TAIL SIDE

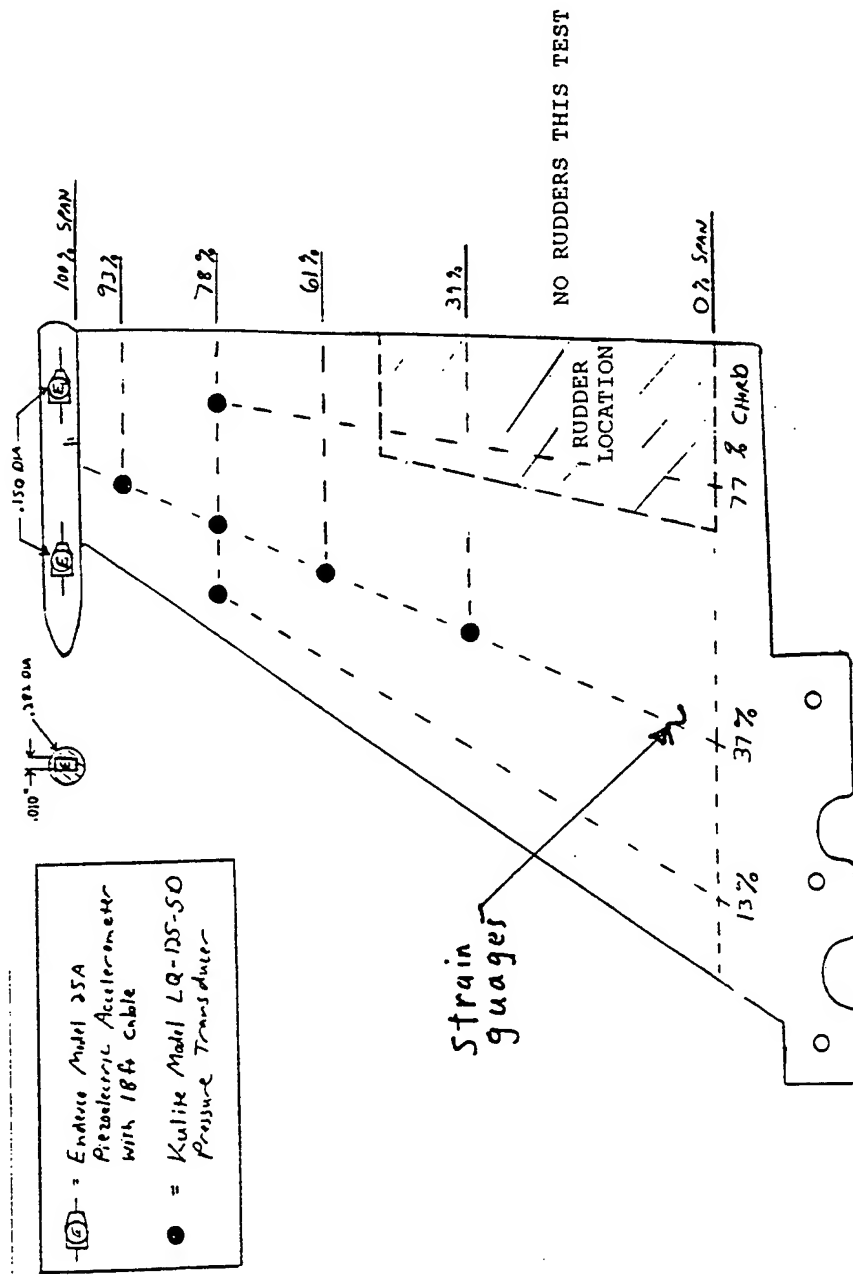


DETAILS OF VERT. TAIL WITH TIP POD



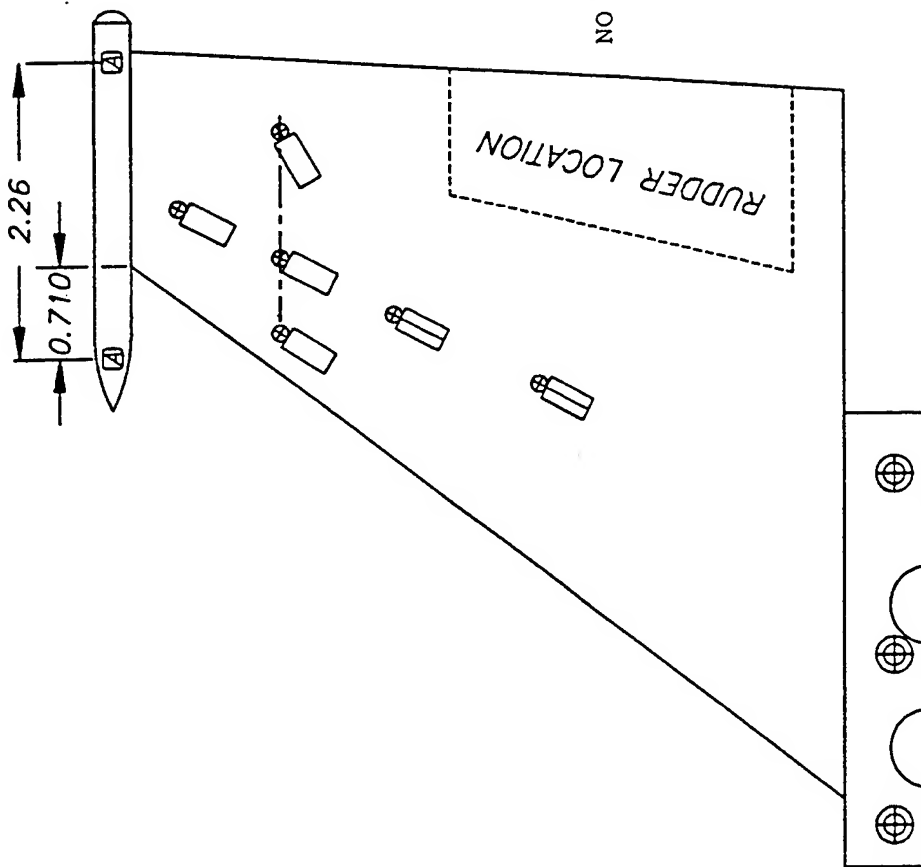
VERT. TAIL GEOMETRY WITHOUT TIP PODS

## GEOMETRY OF 4.7% SCALE VERTICAL TAIL



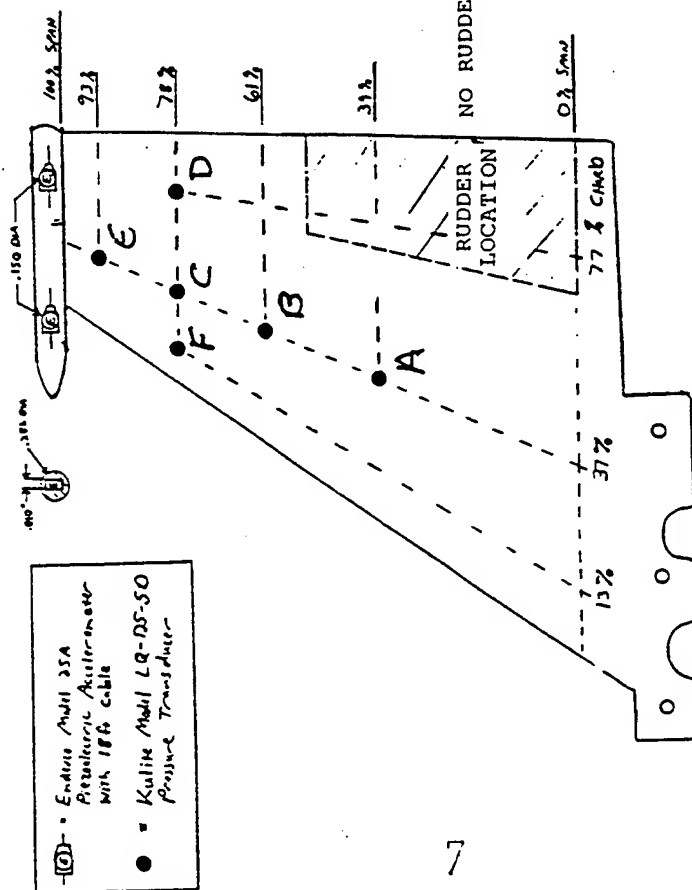
INSTRUMENTATION LAYOUT ON FLEXIBLE VERTICAL TAIL



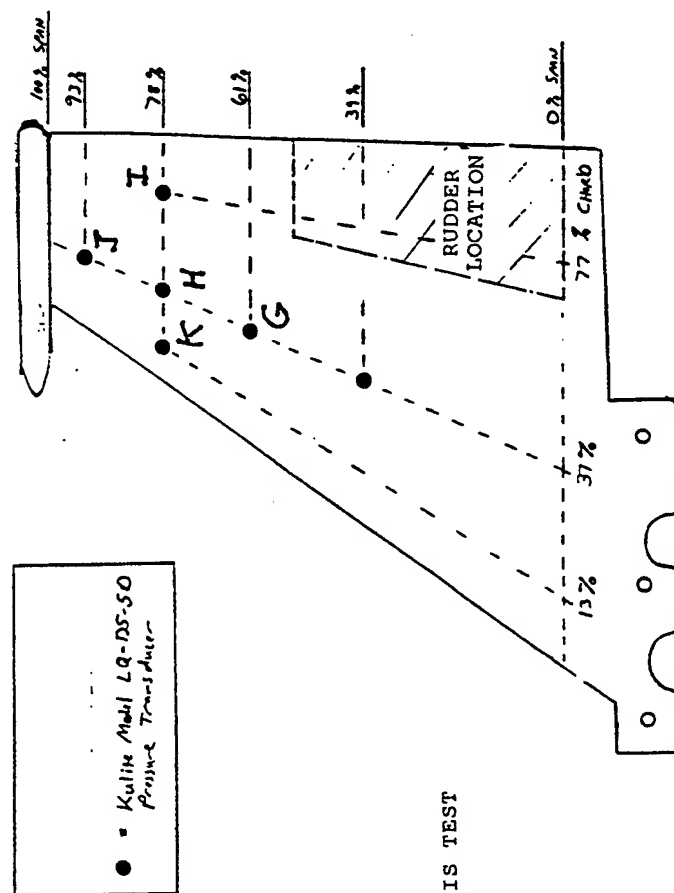


PRESSURE TRANSDUCER LAYOUT - BOTH TAILS

# FLEXIBLE TAIL



# RIGID TAIL



NO RUDDERS THIS TEST

# PRESSURE TRANSDUCERS- LETTER IDENTIFICATION

**FLEXIBLE TAIL RESPONSE  
BENDING AND TORSION**

**2.1 Q=56 PSF**

**2.1.1 PSD GRAPHS**

**2.1.1.1 WBP = 0, 45, 65 psi,**

**2.1.1.2 GBP = 65 psi**

**2.1.1.3 GBP = 65 psi, WBP = 65 psi**

**2.1.1.4 NBP = 87 psi**

**2.1.1.5 NBP = 87 psi, GBP = 65 psi**

**2.1.1.6 NBP = 87 psi, GBP = 65 psi**

**2.1.2 RMS SUMMARY TABS**

**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION**

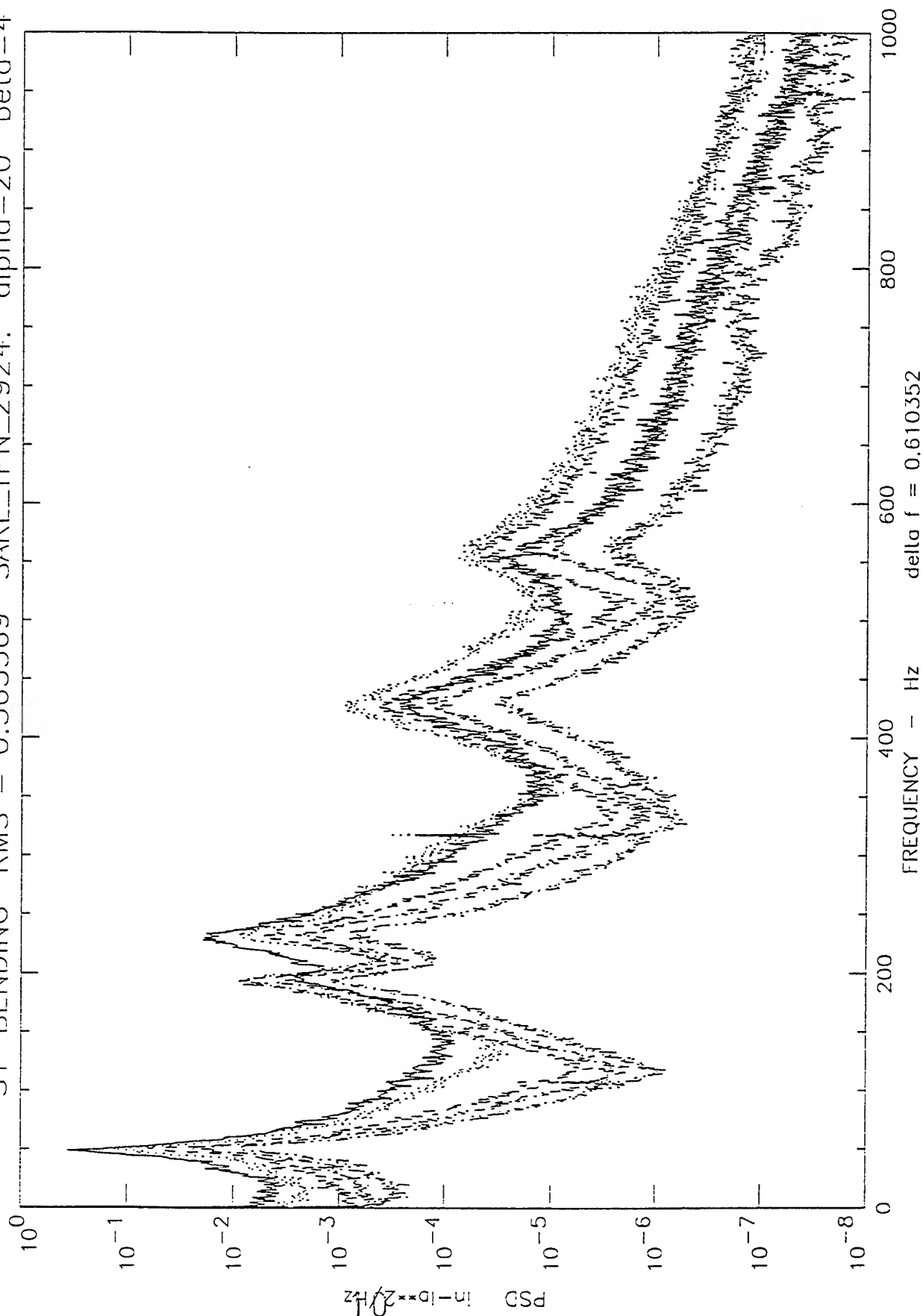
**PSD GRAPHS**

**Q= 56 PSF**

**2.1.1.1 WBP = 0, BETA= 0, + 4, - 4, ALPHA= 0.....32 Deg**

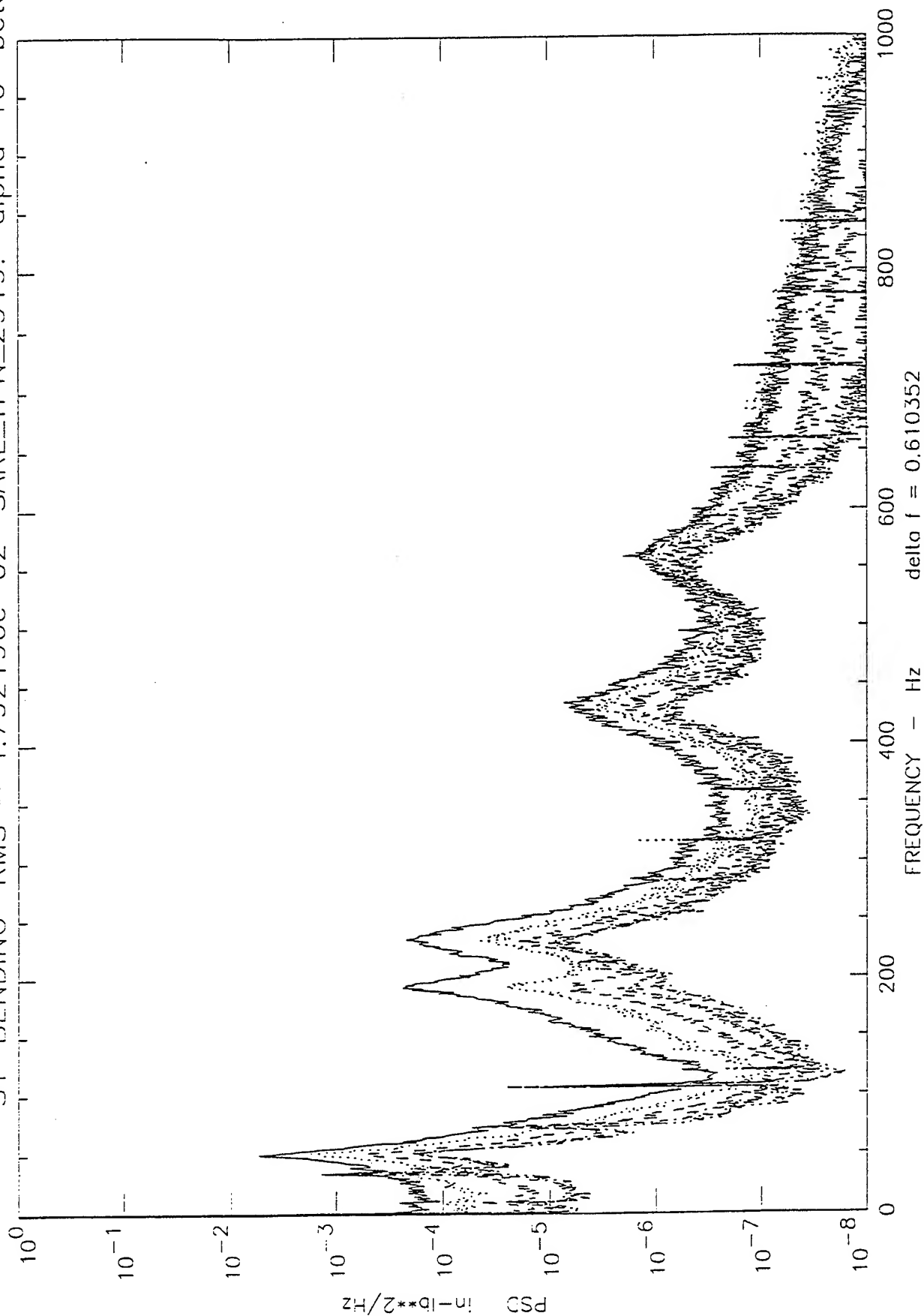
F=15 V lical Tail Buffet Test: Q=56, Flexible, o Blowing

---	S1-BENDING	RMS = 1.62116	SARL_TPN_2928:	alpha=32	beta=4
---	S1-BENDING	RMS = 1.13775	SARL_TPN_2927:	alpha=28	beta=4
---	S1-BENDING	RMS = 0.796603	SARL_TPN_2926:	alpha=24	beta=4
---	S1-BENDING	RMS = 0.547720	SARL_TPN_2925:	alpha=22	beta=4
---	S1-BENDING	RMS = 0.363569	SARL_TPN_2924:	alpha=20	beta=4



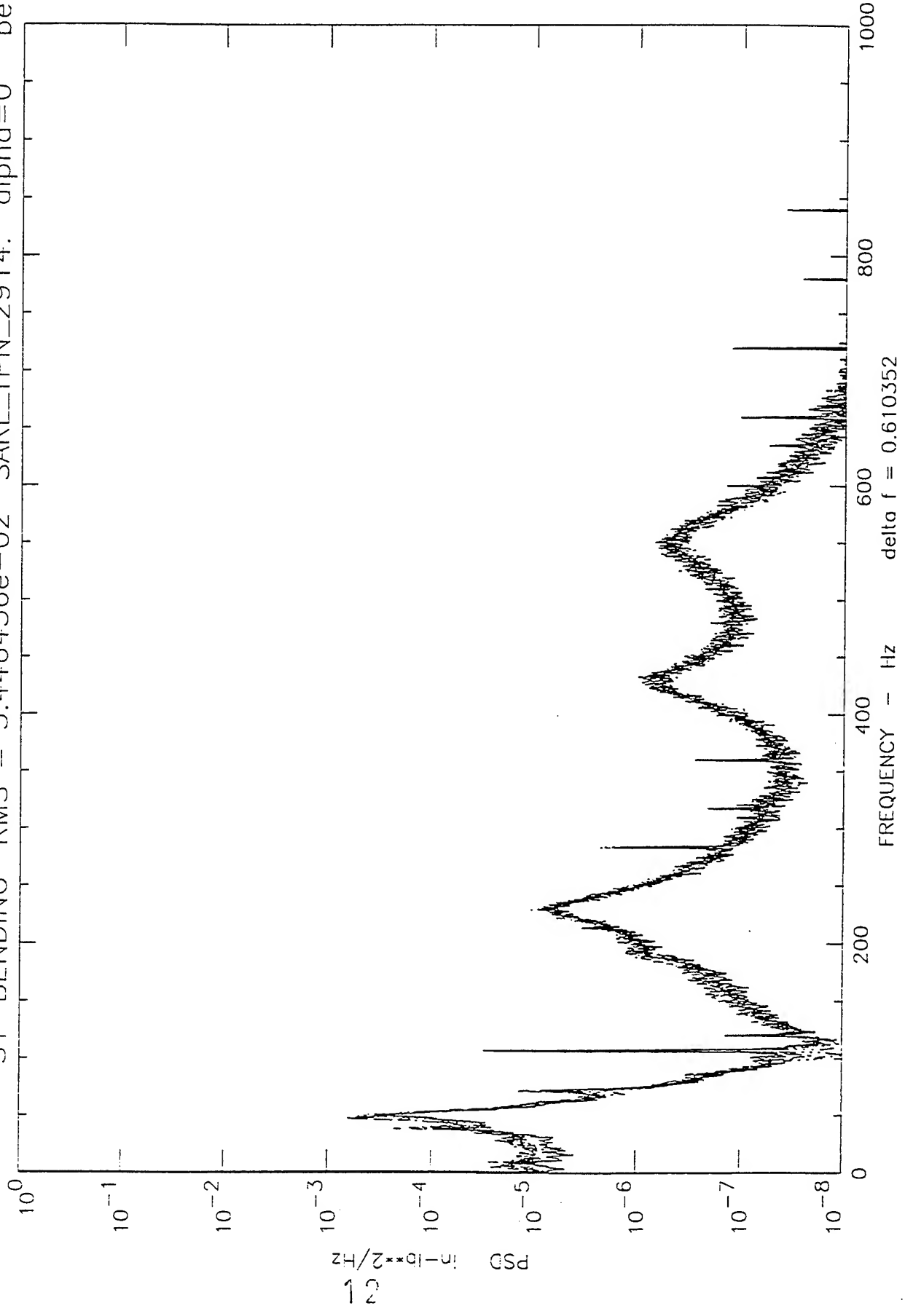
F-15 V ical Tail Buffet Test: Q=56, Flexible, o Blowing

--- S1-BENDING RMS = 0.230202 SARL\_TPN\_2923: alpha=18 beta=4  
 ..... S1-BENDING RMS = 0.136720 SARL\_TPN\_2922: alpha=16 beta=4  
 --- S1-BENDING RMS = 8.308680e-02 SARL\_TPN\_2921: alpha=14 beta=4  
 -.-.- S1-BENDING RMS = 5.462211e-02 SARL\_TPN\_2920: alpha=12 beta=4  
 -.-.- S1-BENDING RMS = 4.792196e-02 SARL\_TPN\_2919: alpha=10 beta=4



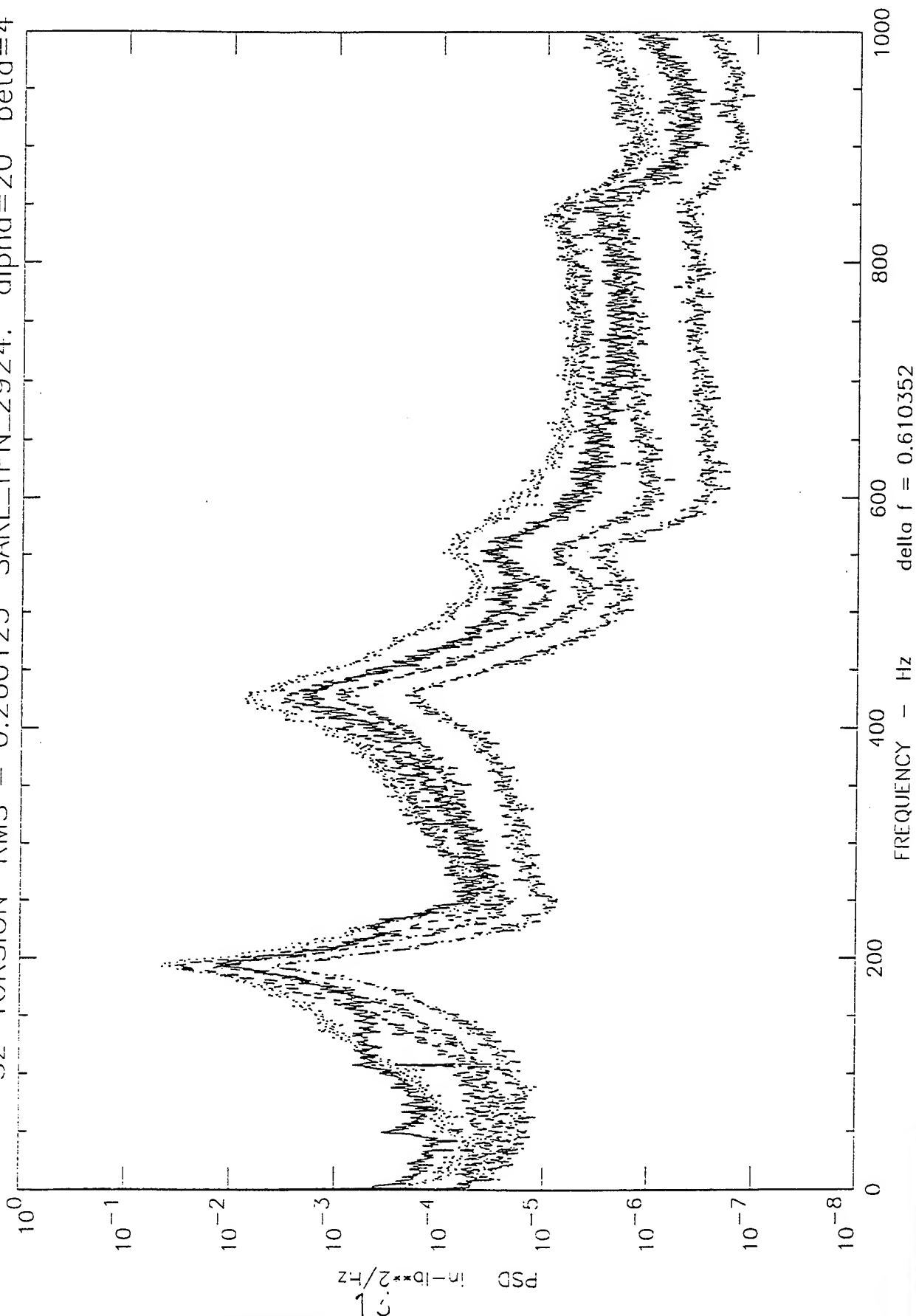
F-15 V ical Tail Buffet Test: Q=56, Flexible, .o Blowing

—	S1-BENDING	RMS =	4.891802e-02	SARL_TPN_2918:	alpha=8	beta=4
---	S1-BENDING	RMS =	6.095253e-02	SARL_TPN_2917:	alpha=6	beta=4
- - -	S1-BENDING	RMS =	6.545379e-02	SARL_TPN_2916:	alpha=4	beta=4
- . - .	S1-BENDING	RMS =	6.529297e-02	SARL_TPN_2915:	alpha=2	beta=4
- - - -	S1-BENDING	RMS =	5.446436e-02	SARL_TPN_2914:	alpha=0	beta=4



F-15 V ical Tail Buffet Test: Q=56, Flexible, o Blowing

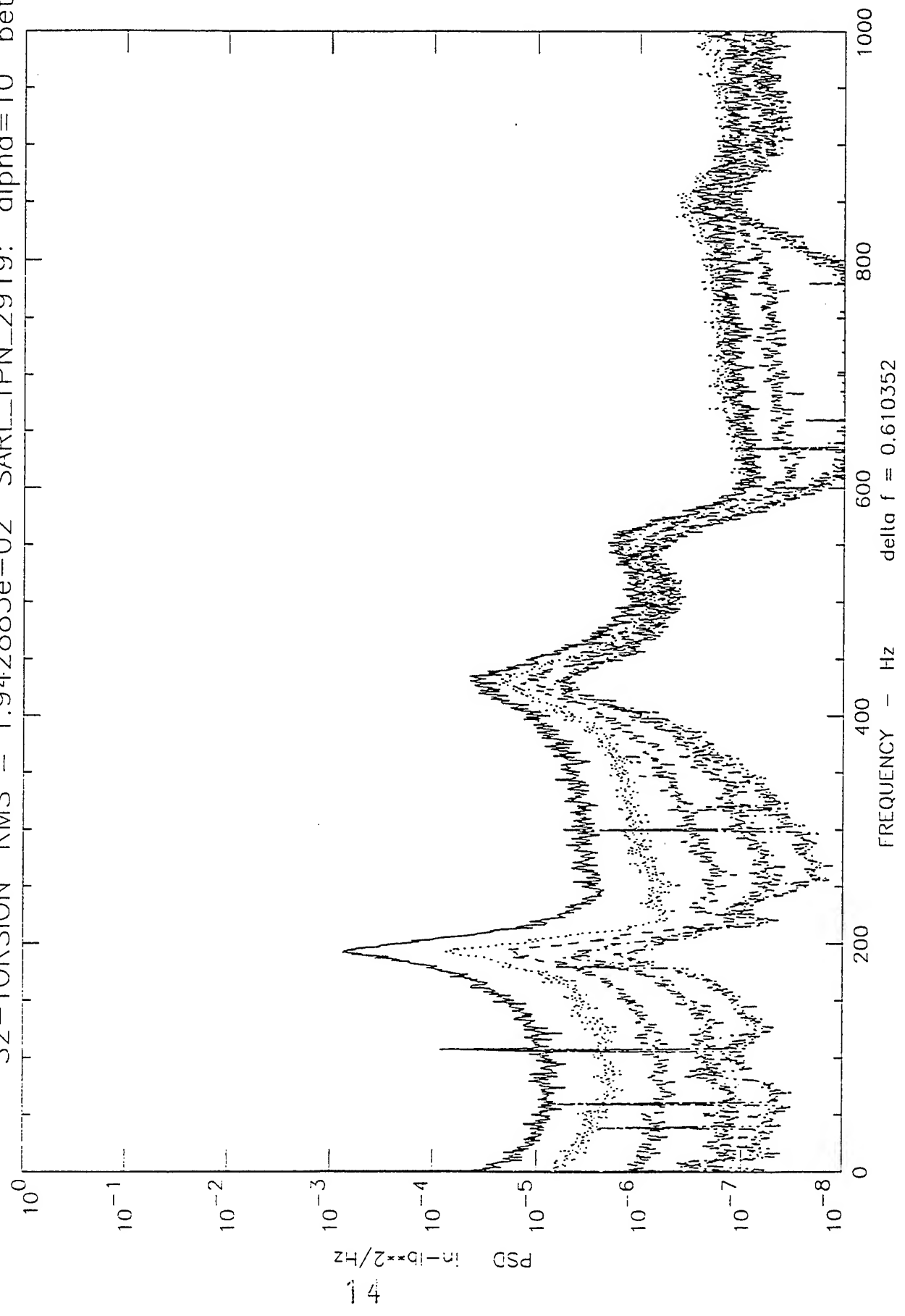
---	S2-TORSION	RMS = 0.563100	SARL_TPN_2928:	alpha=32	beta=4
---	S2-TORSION	RMS = 0.966768	SARL_TPN_2927:	alpha=28	beta=4
---	S2-TORSION	RMS = 0.743773	SARL_TPN_2926:	alpha=24	beta=4
---	S2-TORSION	RMS = 0.469019	SARL_TPN_2925:	alpha=22	beta=4
---	S2-TORSION	RMS = 0.260123	SARL_TPN_2924:	alpha=20	beta=4





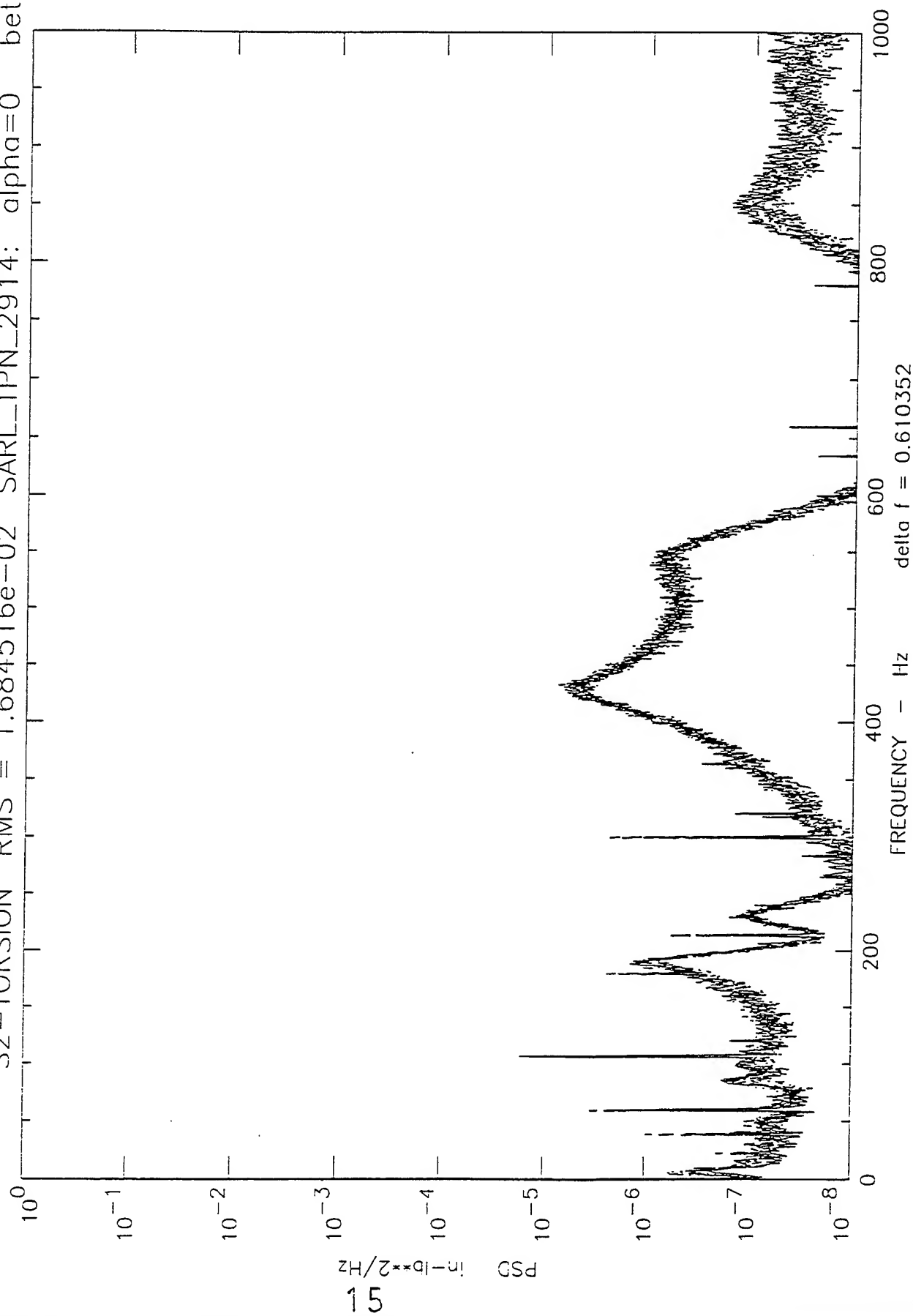
F-15 V ical Tail Buffet Test: Q=56, Flexible, o Blowing

— S2-TORSION RMS = 0.117924 SARL\_TPN\_2923: alpha=18 beta=4  
..... S2-TORSION RMS = 5.147009e-02 SARL\_TPN\_2922: alpha=16 beta=4  
- - - S2-TORSION RMS = 3.221441e-02 SARL\_TPN\_2921: alpha=14 beta=4  
- - - S2-TORSION RMS = 2.176169e-02 SARL\_TPN\_2920: alpha=12 beta=4  
- - - S2-TORSION RMS = 1.942885e-02 SARL\_TPN\_2919: alpha=10 beta=4

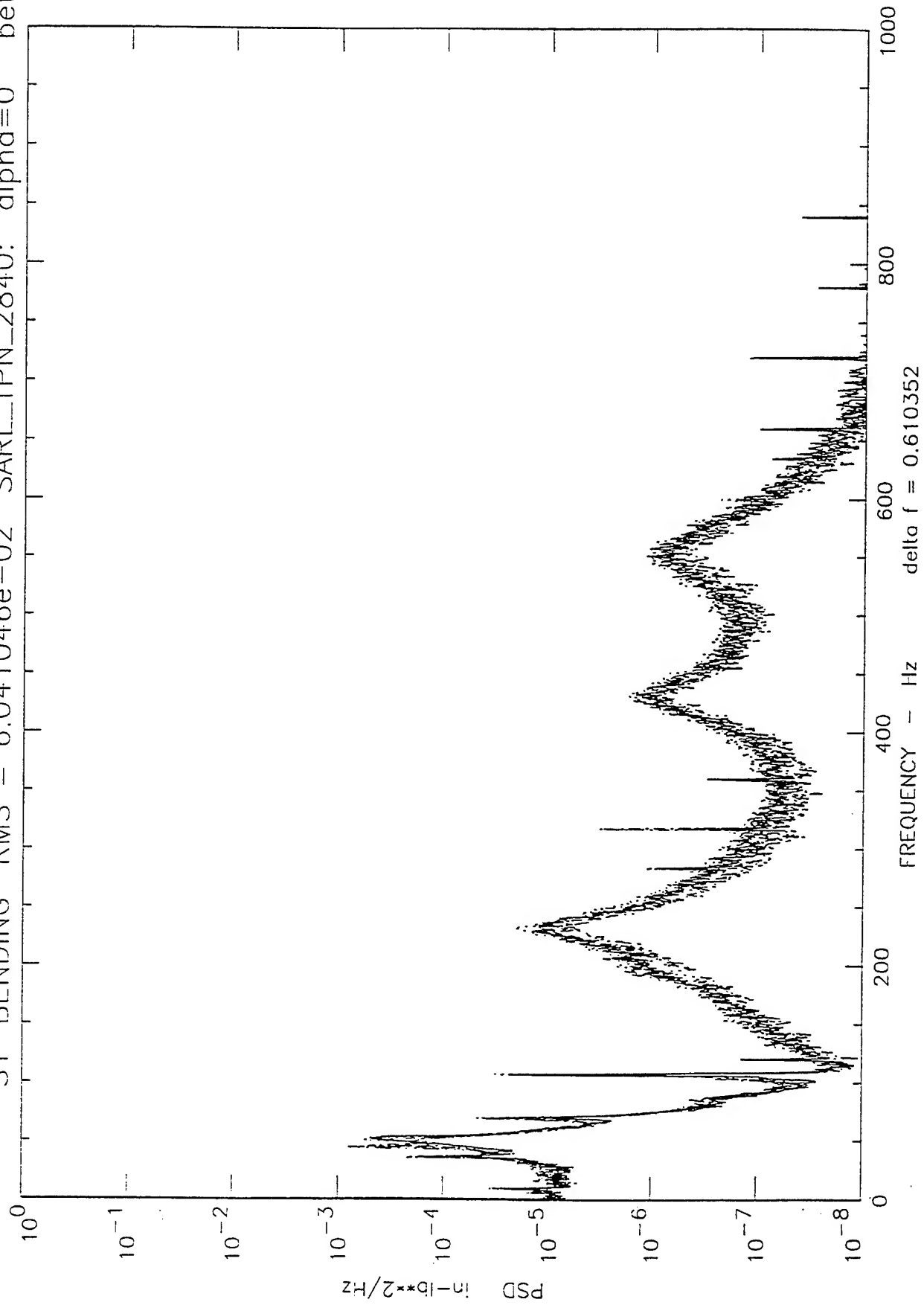


F-15 V ical Tail Buffet Test: Q=56, Flexible, o Blowing

.....	S2-TORSION	RMS = 1.746896e-02	SARL_IPN_2918:	alpha=8	beta=4
.....	S2-TORSION	RMS = 1.743821e-02	SARL_IPN_2917:	alpha=6	beta=4
-----	S2-TORSION	RMS = 1.732974e-02	SARL_IPN_2916:	alpha=4	beta=4
-----	S2-TORSION	RMS = 1.646047e-02	SARL_IPN_2915:	alpha=2	beta=4
-----	S2-TORSION	RMS = 1.684516e-02	SARL_IPN_2914:	alpha=0	beta=4

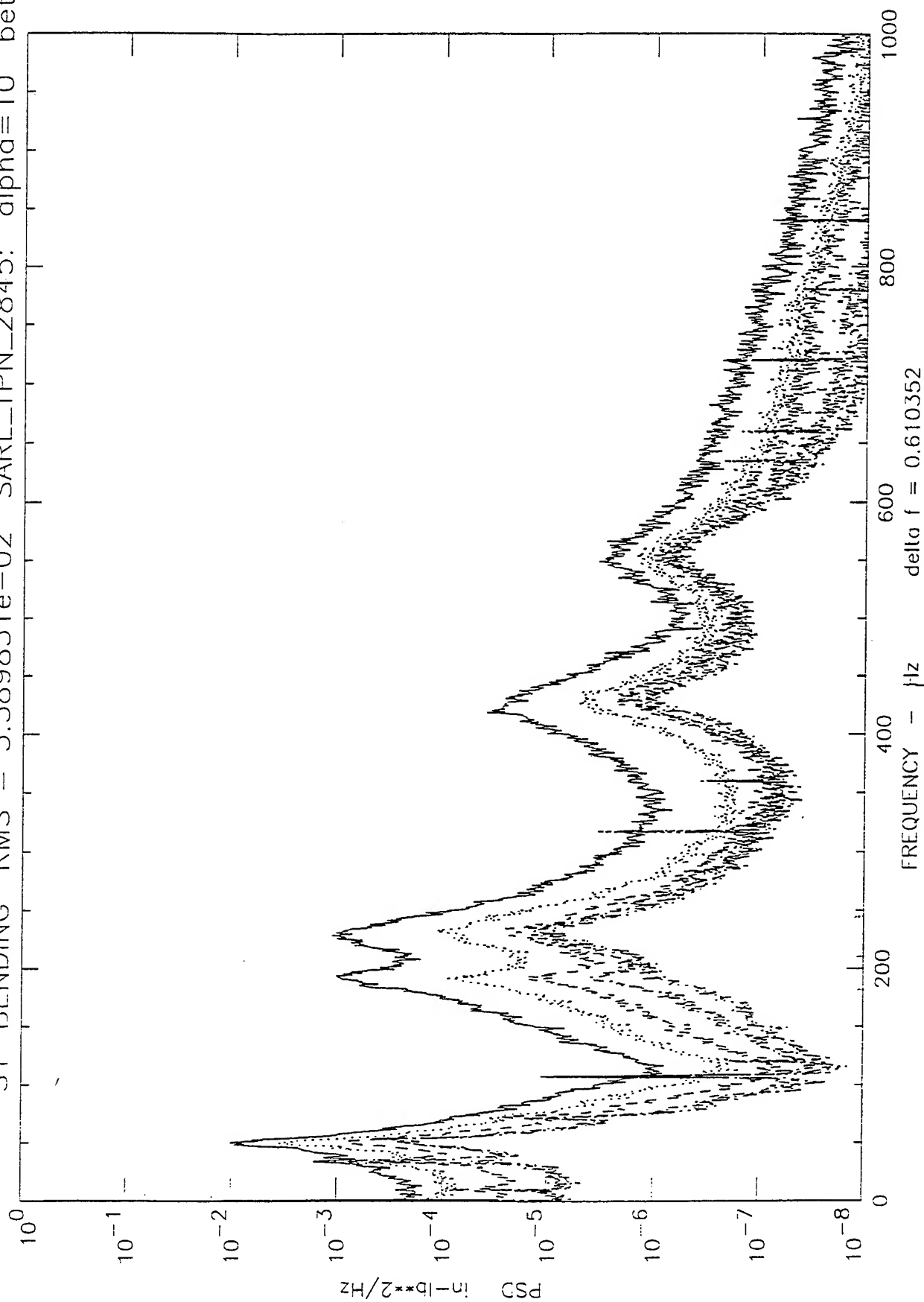


—	S1-BENDING	RMS = 6.086398e-02	SARL_TPN_2844:	alpha=8	beta=0
.....	S1-BENDING	RMS = 6.322796e-02	SARL_TPN_2843:	alpha=6	beta=0
- - - -	S1-BENDING	RMS = 6.001131e-02	SARL_TPN_2842:	alpha=4	beta=0
- - - -	S1-BENDING	RMS = 6.068240e-02	SARL_TPN_2841:	alpha=2	beta=0
.....	S1-BENDING	RMS = 6.041046e-02	SARL_TPN_2840:	alpha=0	beta=0

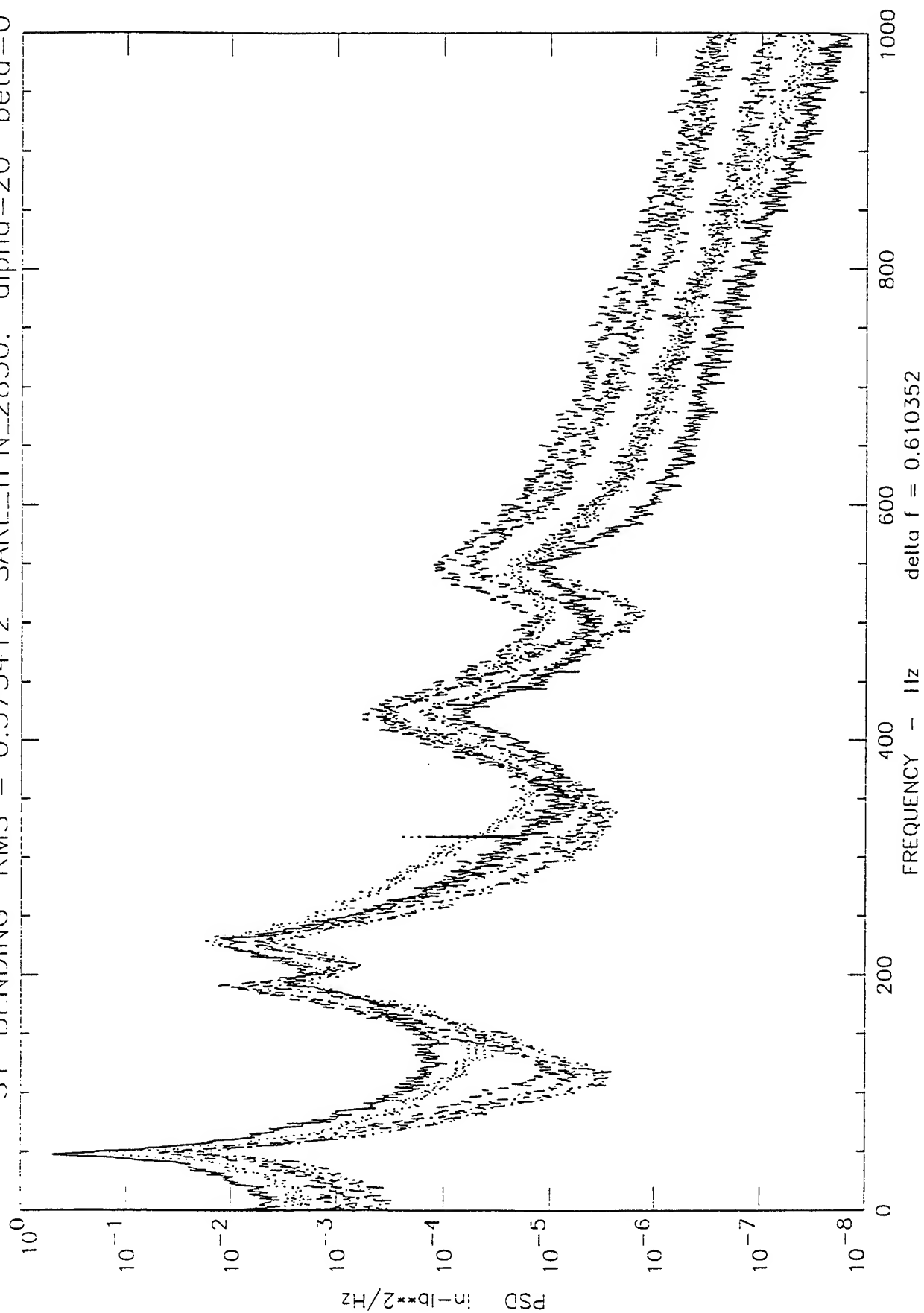


# F-15 Critical Tail Buffet Test: Q=56, Flexible to Blowing

---	S1-BENDING	RMS = 0.360267	SARL_TPN_2849:	alpha=18	beta=0
---	S1-BENDING	RMS = 0.184531	SARL_TPN_2848:	alpha=16	beta=0
---	S1-BENDING	RMS = 0.102508	SARL_TPN_2847:	alpha=14	beta=0
---	S1-BENDING	RMS = 6.162486e-02	SARL_TPN_2846:	alpha=12	beta=0
---	S1-BENDING	RMS = 5.589831e-02	SARL_TPN_2845:	alpha=10	beta=0

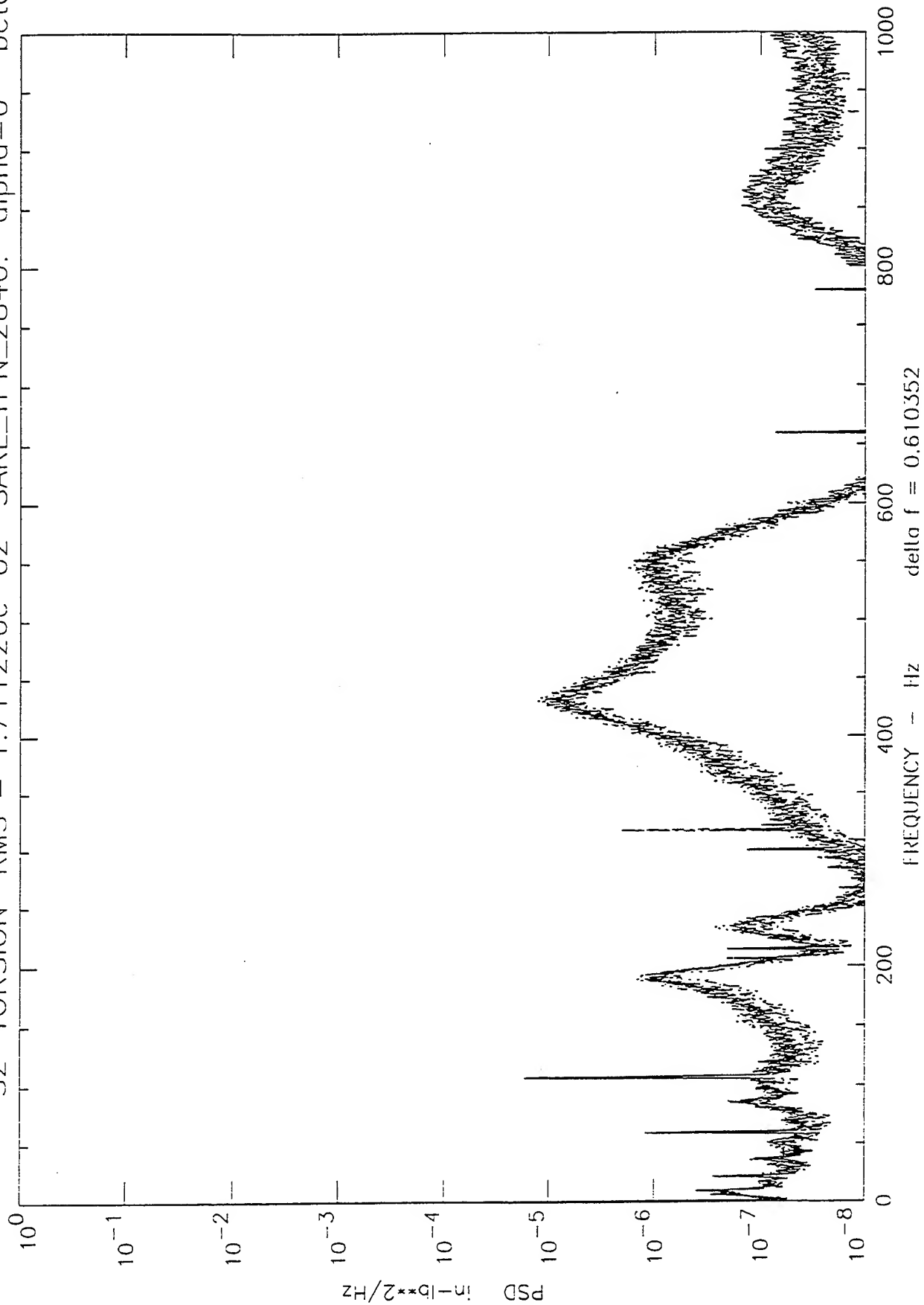


---	S1-BENDING	RMS = 1.79350	SARL_TPN_2854:	alpha=32	beta=0
---	S1-BENDING	RMS = 1.24011	SARL_TPN_2853:	alpha=28	beta=0
---	S1-BENDING	RMS = 0.863039	SARL_TPN_2852:	alpha=24	beta=0
---	S1-BENDING	RMS = 0.737765	SARL_TPN_2851:	alpha=22	beta=0
---	S1-BENDING	RMS = 0.575412	SARL_TPN_2850:	alpha=20	beta=0

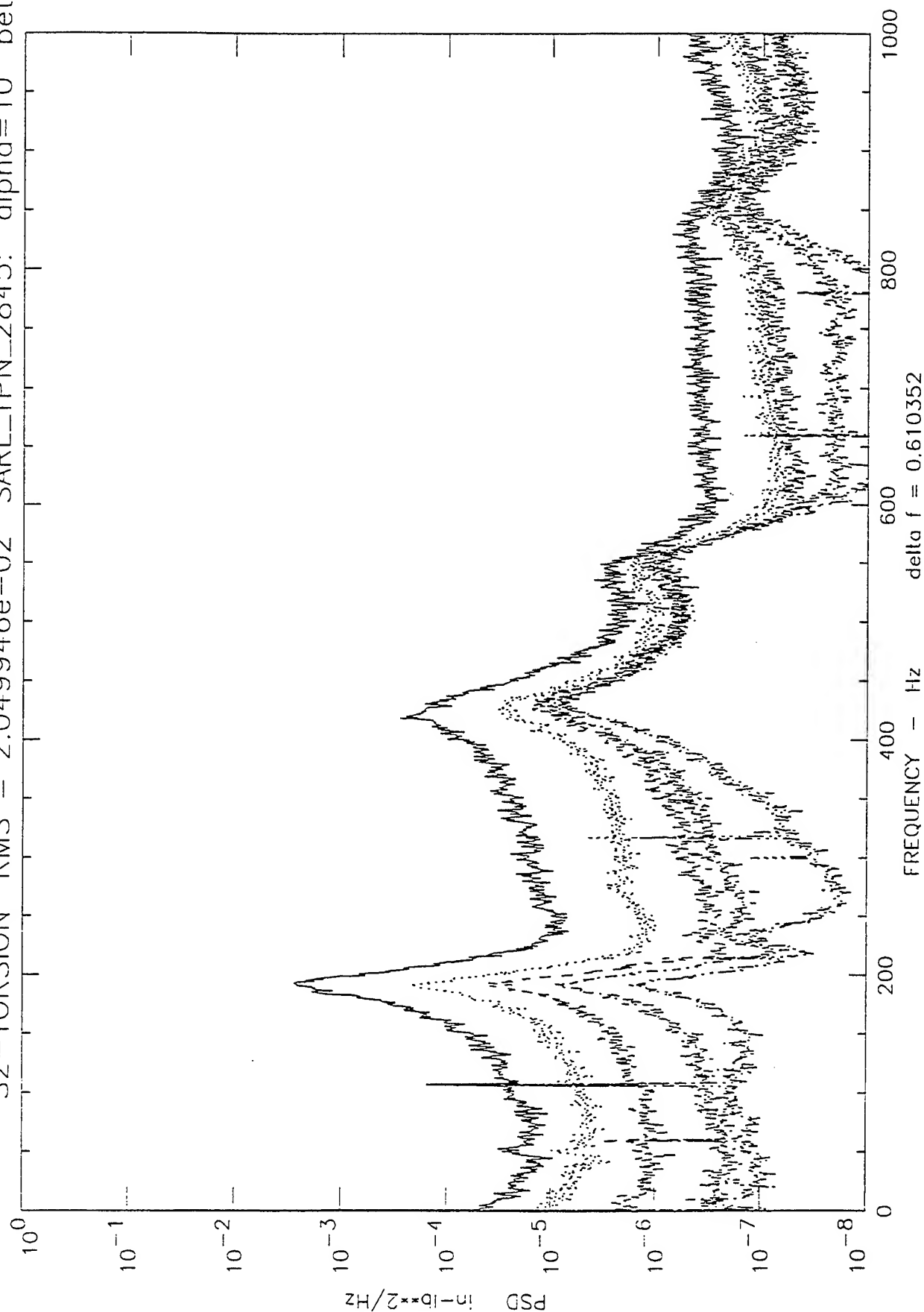


F-15 Critical Tail Buffet Test: Q=56, Flexible, No Blowing

---	S2-TORSION	RMS = 2.074381e-02	SARL_IPN_2844:	alpha=8	beta=0
.....	S2-TORSION	RMS = 2.299630e-02	SARL_IPN_2843:	alpha=6	beta=0
- - - -	S2-TORSION	RMS = 2.149061e-02	SARL_IPN_2842:	alpha=4	beta=0
- . - . -	S2-TORSION	RMS = 1.941158e-02	SARL_IPN_2841:	alpha=2	beta=0
- . . . -	S2-TORSION	RMS = 1.711226e-02	SARL_IPN_2840:	alpha=0	beta=0

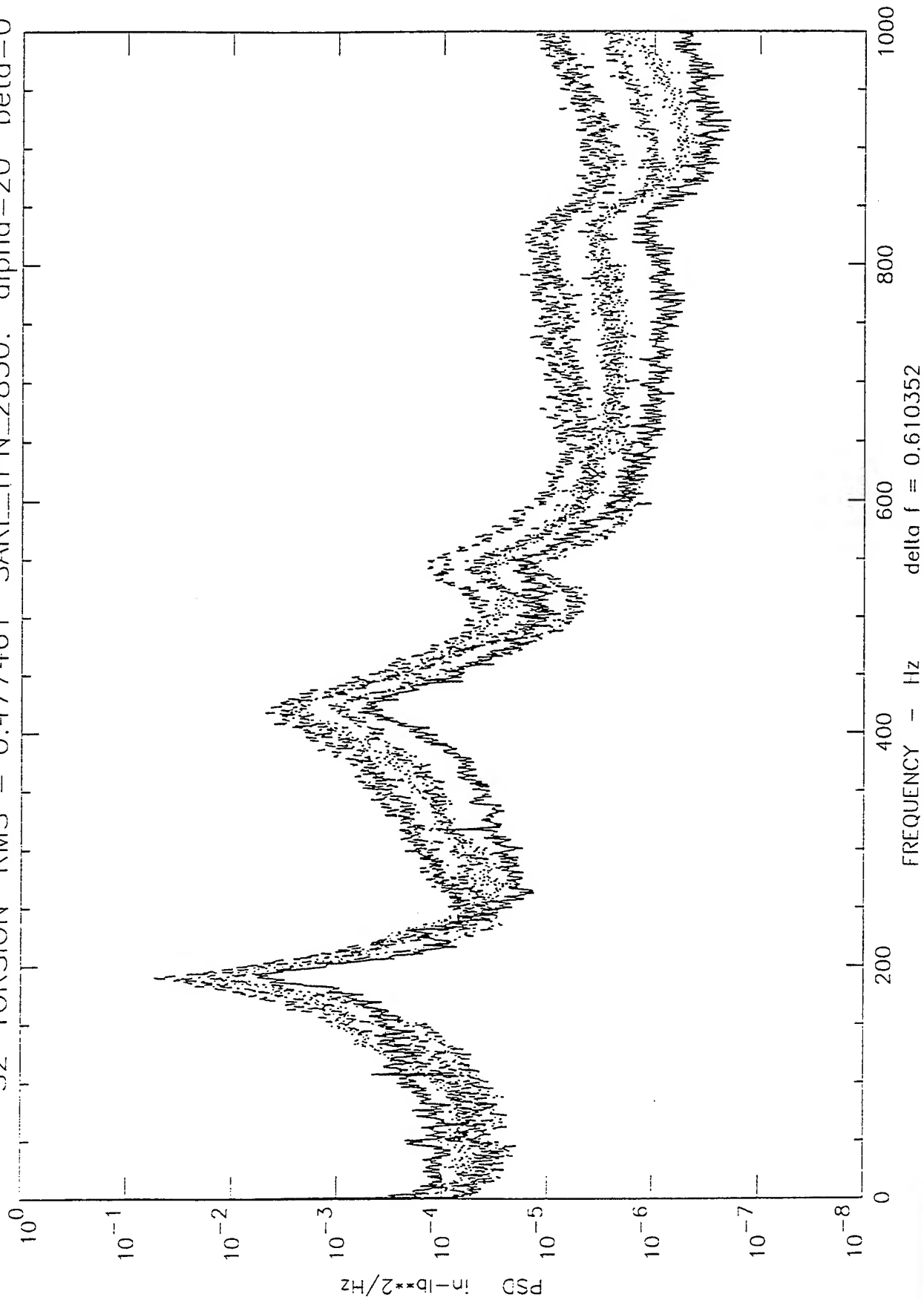


--- S2-TORSION RMS = 0.236945 SARL\_TPN\_2849: alpha=18 beta=0  
 ..... S2-TORSION RMS = 7.514802e-02 SARL\_TPN\_2848: alpha=16 beta=0  
 - - - - S2-TORSION RMS = 3.916111e-02 SARL\_TPN\_2847: alpha=14 beta=0  
 - - - - S2-TORSION RMS = 2.687191e-02 SARL\_TPN\_2846: alpha=12 beta=0  
 - - - - S2-TORSION RMS = 2.049946e-02 SARL\_TPN\_2845: alpha=10 beta=0



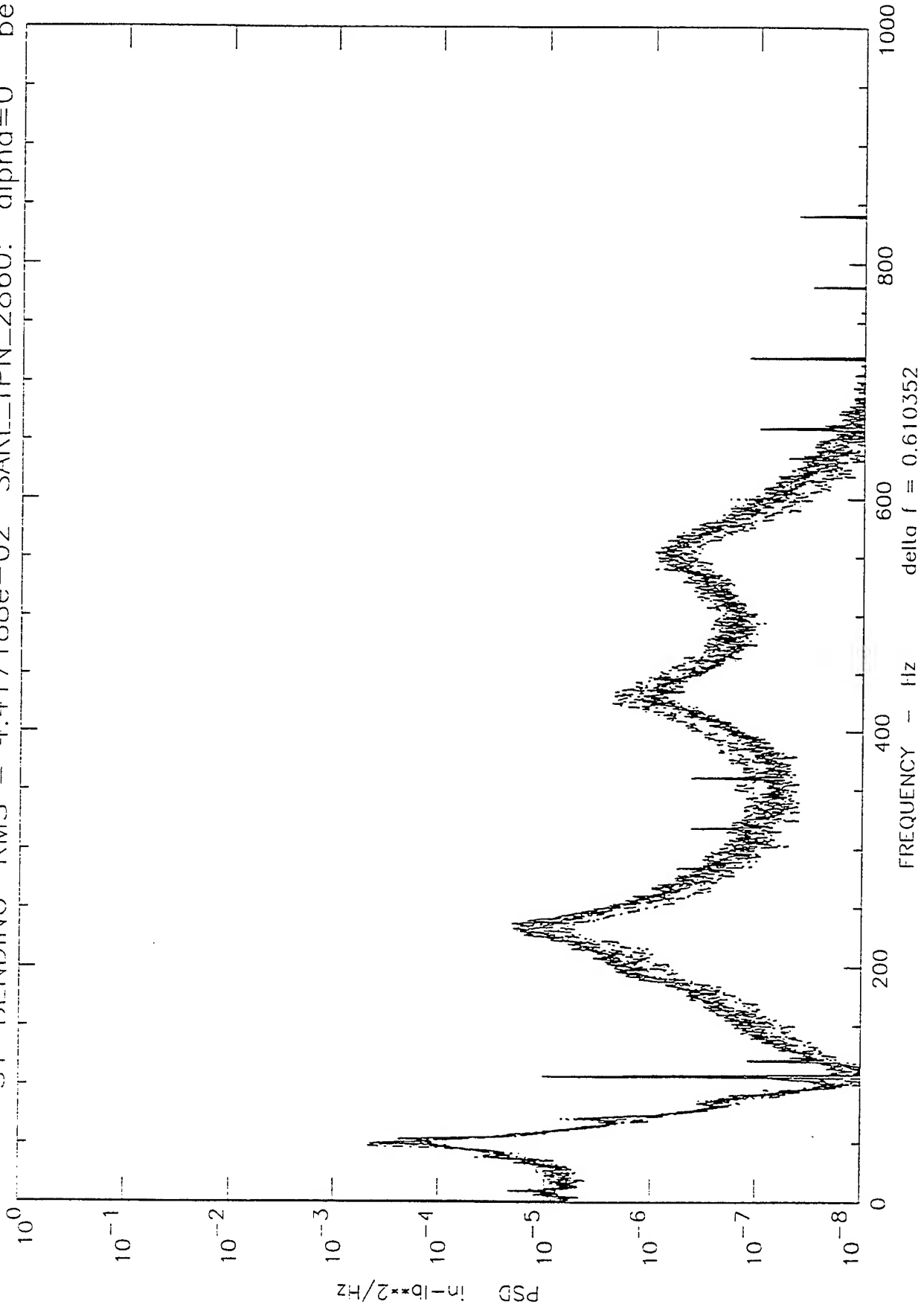
# F-15 Critical Tail Buffet Test: Q=56, Flexible, Jo Blowing

---	S2-TORSION	RMS = 0.378736	SARL_TPN_2854:	alpha=32	beta=0
---	S2-TORSION	RMS = 0.597859	SARL_TPN_2853:	alpha=28	beta=0
---	S2-TORSION	RMS = 0.918385	SARL_TPN_2852:	alpha=24	beta=0
---	S2-TORSION	RMS = 0.724955	SARL_TPN_2851:	alpha=22	beta=0
---	S2-TORSION	RMS = 0.477461	SARL_TPN_2850:	alpha=20	beta=0



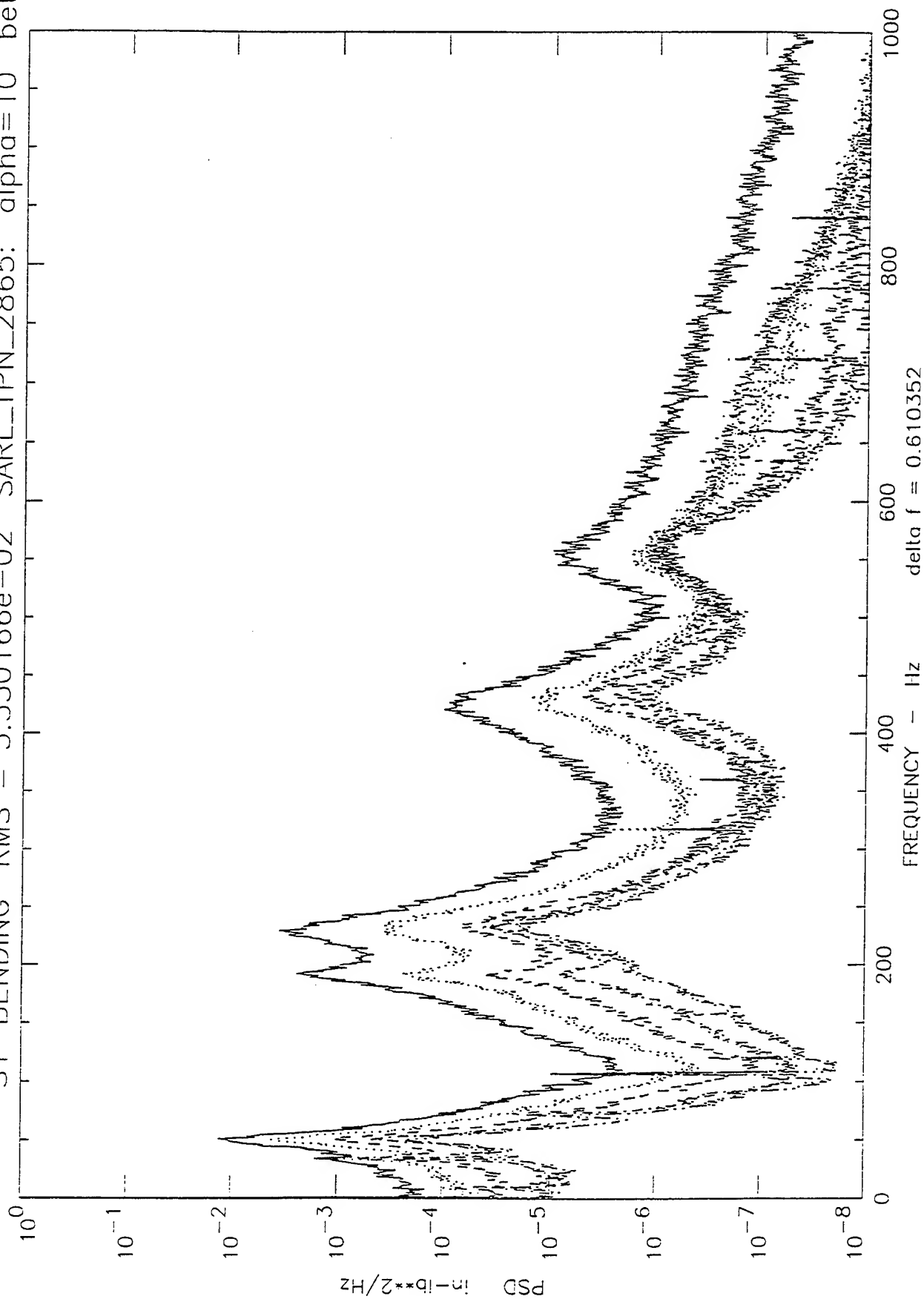


—	S1-BENDING	RMS =	5.372180e-02	SARL_IPN_2864:	alpha=8	beta=-4
---	S1-BENDING	RMS =	5.200567e-02	SARL_IPN_2863:	alpha=6	beta=-4
- - -	S1-BENDING	RMS =	5.039134e-02	SARL_IPN_2862:	alpha=4	beta=-4
- - -	S1-BENDING	RMS =	5.461342e-02	SARL_IPN_2861:	alpha=2	beta=-4
---	S1-BENDING	RMS =	4.417188e-02	SARL_IPN_2860:	alpha=0	beta=-4

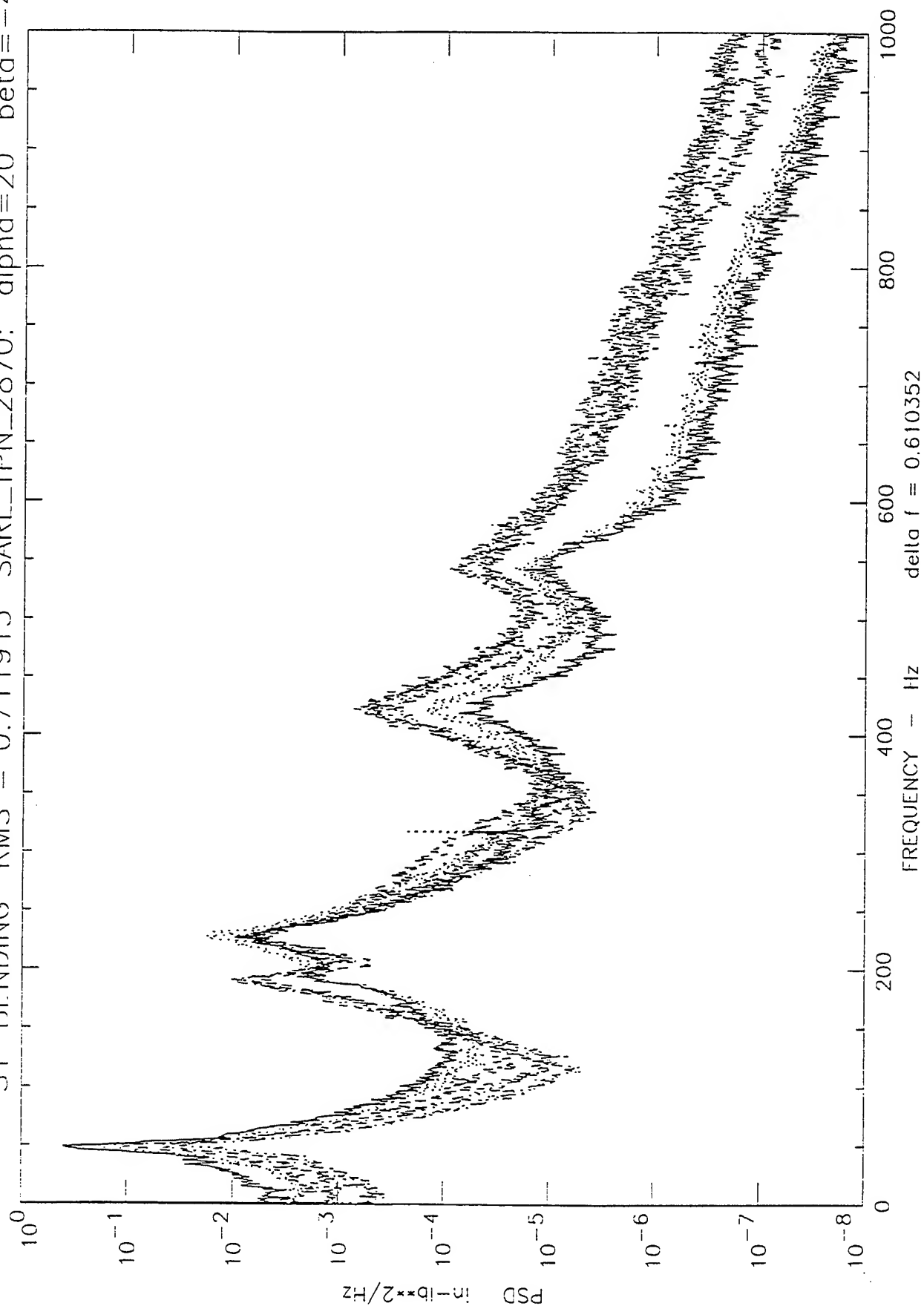


# F-15 Critical Tail Buffet Test: Q=56, Flexible, do Blowing

--- S1-BENDING RMS = 0.464581 SARL\_TPN\_2869: alpha=18 beta=-4  
 ..... S1-BENDING RMS = 0.224000 SARL\_TPN\_2868: alpha=16 beta=-4  
 - - - S1-BENDING RMS = 0.120740 SARL\_TPN\_2867: alpha=14 beta=-4  
 - - - S1-BENDING RMS = 7.298265e-02 SARL\_TPN\_2866: alpha=12 beta=-4  
 - - - S1-BENDING RMS = 5.350166e-02 SARL\_TPN\_2865: alpha=10 beta=-4

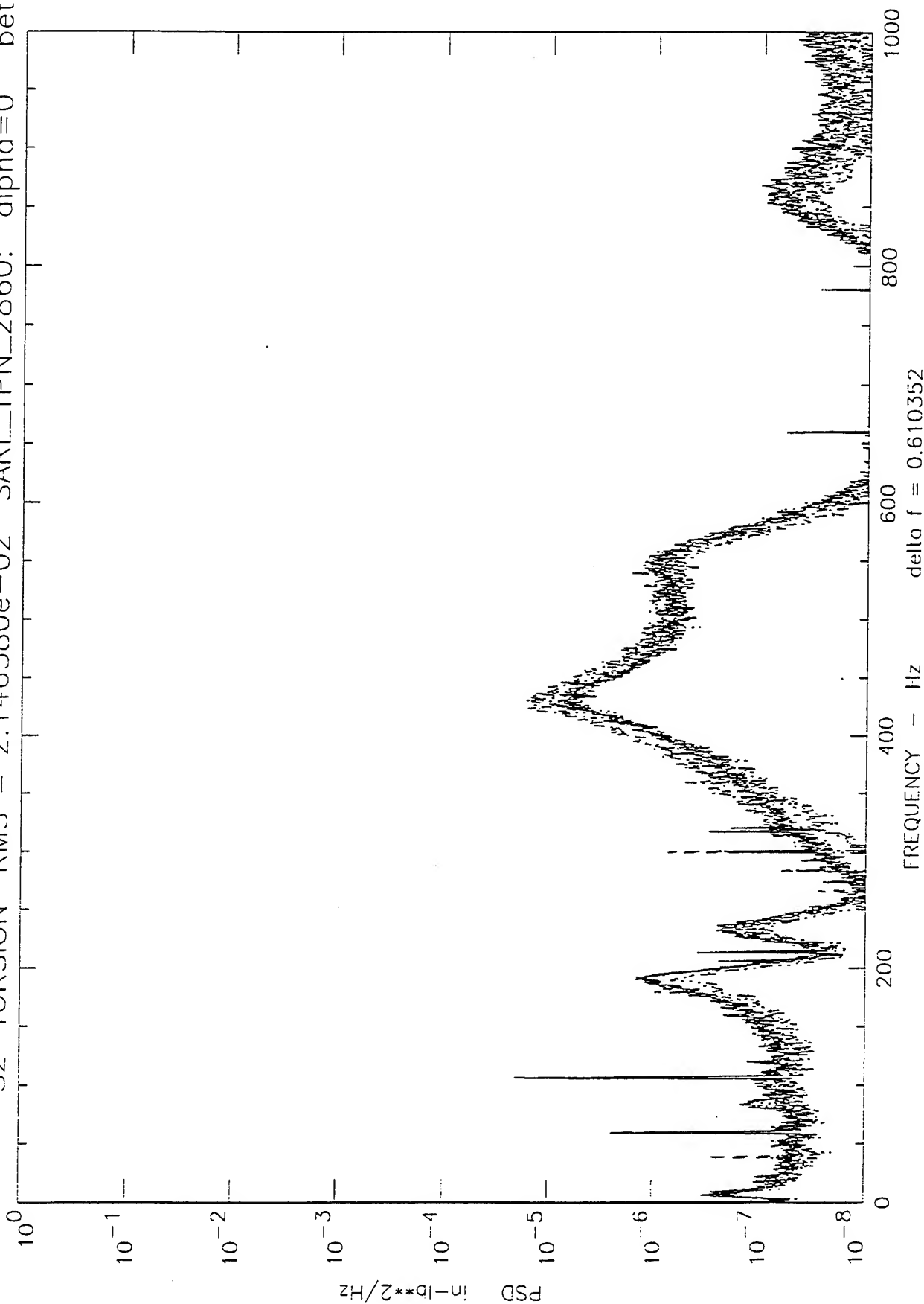


S1--BENDING RMS = 1.70698 SARL\_TPN\_2874: alpha=32 beta=-4  
 S1--BENDING RMS = 1.32269 SARL\_TPN\_2873: alpha=28 beta=-4  
 S1--BENDING RMS = 1.03242 SARL\_TPN\_2872: alpha=24 beta=-4  
 S1--BENDING RMS = 0.895290 SARL\_TPN\_2871: alpha=22 beta=-4  
 S1--BENDING RMS = 0.711915 SARL\_TPN\_2870: alpha=20 beta=-4



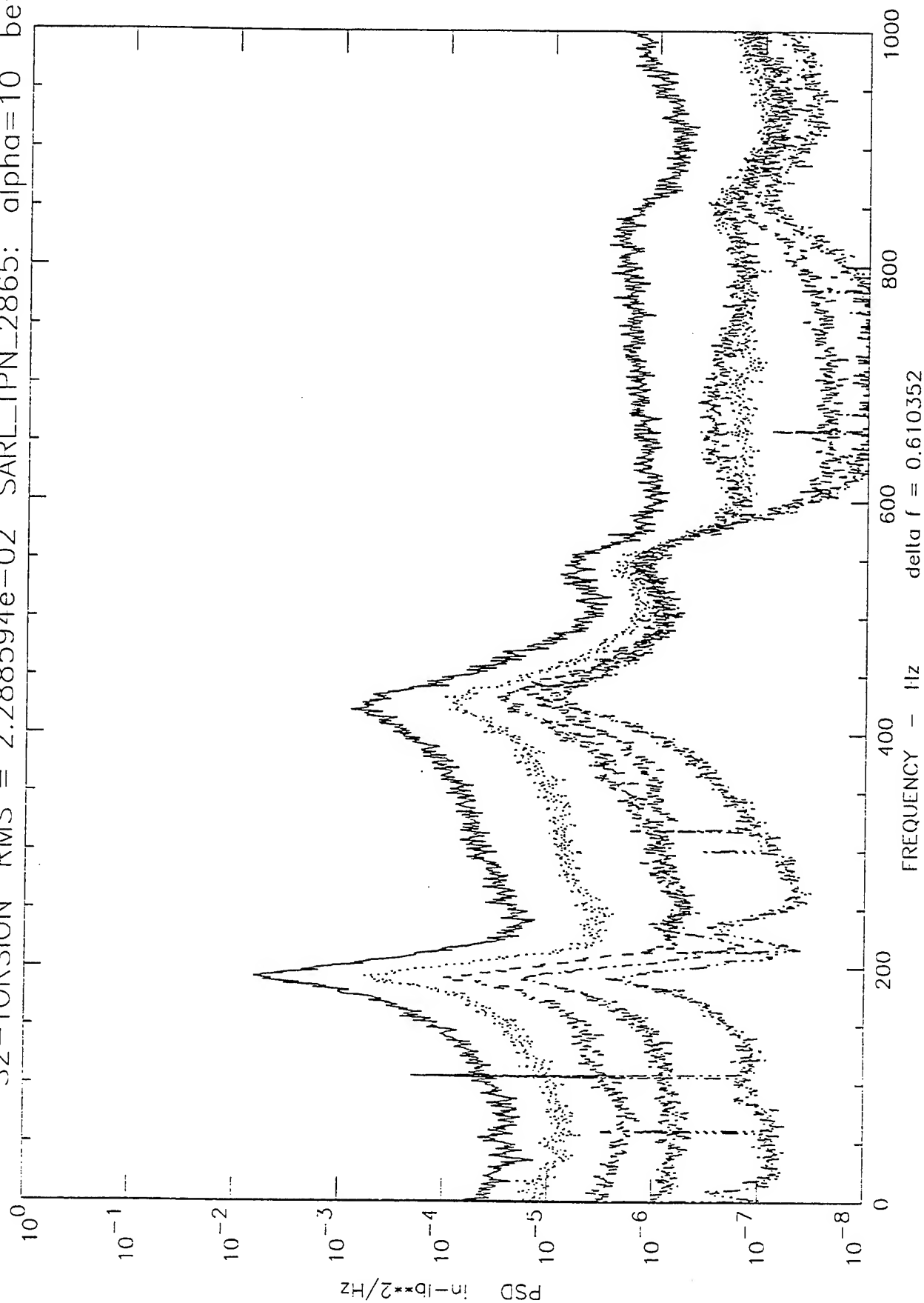
F-15 \ lical Tail Buffet Test: Q=56, Flexible, lo Blowing

—	S2-TORSION	RMS =	2.013059e-02	SARL_TPN_2864:	alpha=8	beta=-4
.....	S2-TORSION	RMS =	1.943668e-02	SARL_TPN_2863:	alpha=6	beta=-4
- - -	S2-TORSION	RMS =	1.932396e-02	SARL_TPN_2862:	alpha=4	beta=-4
- - -	S2-TORSION	RMS =	2.525752e-02	SARL_TPN_2861:	alpha=2	beta=-4
- - -	S2-TORSION	RMS =	2.146380e-02	SARL_TPN_2860:	alpha=0	beta=-4



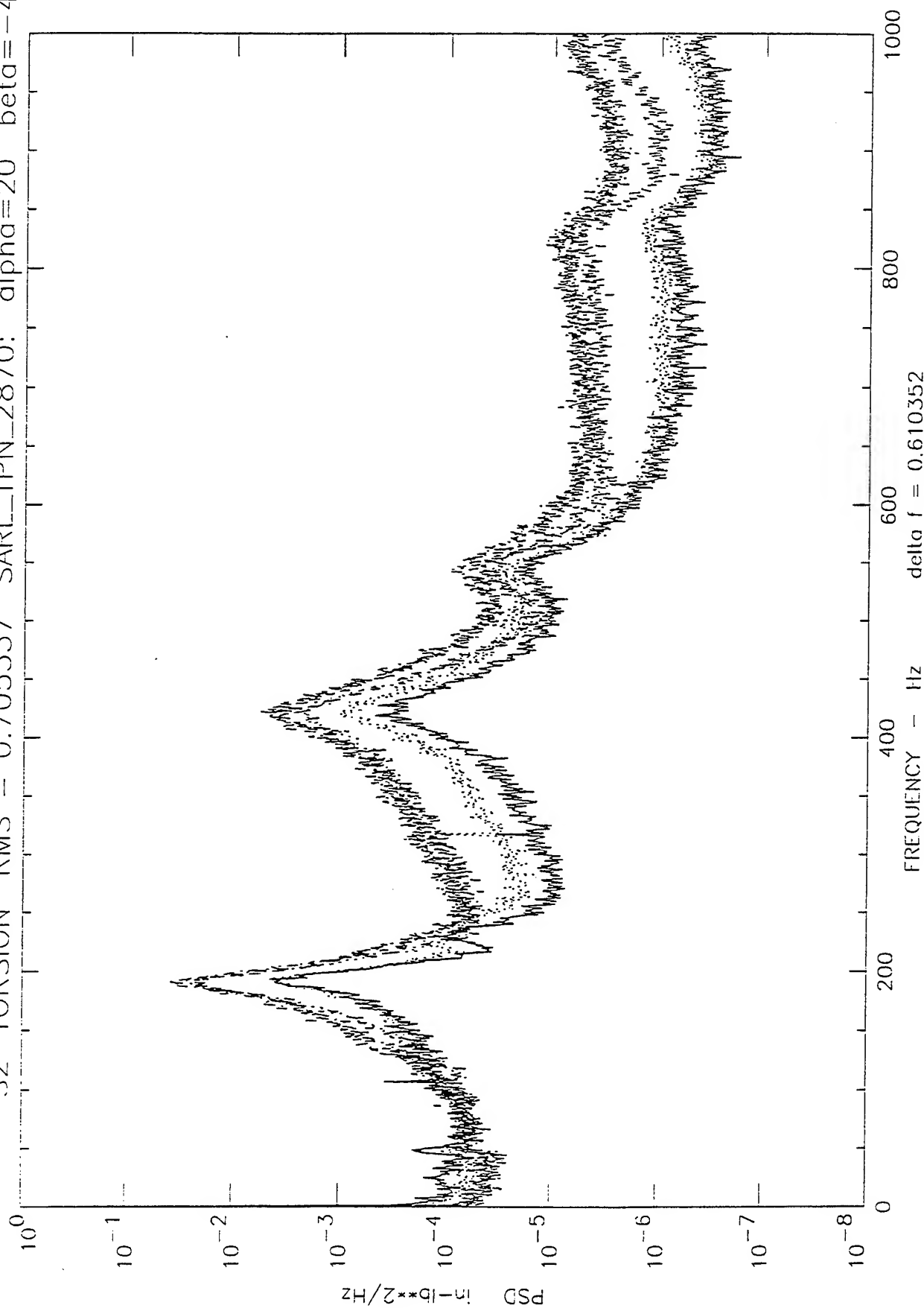
# F-15 Vertical Tail Buffet Test: Q=56, Flexible, to Blowing

---	S2-TORSION	RMS = 0.341618	SARL_TPN_2869:	alpha=18	beta=-4
----	S2-TORSION	RMS = 0.119482	SARL_TPN_2868:	alpha=16	beta=-4
----	S2-TORSION	RMS = 4.994458e-02	SARL_TPN_2867:	alpha=14	beta=-4
----	S2-TORSION	RMS = 4.293735e-02	SARL_TPN_2866:	alpha=12	beta=-4
----	S2-TORSION	RMS = 2.288594e-02	SARL_TPN_2865:	alpha=10	beta=-4

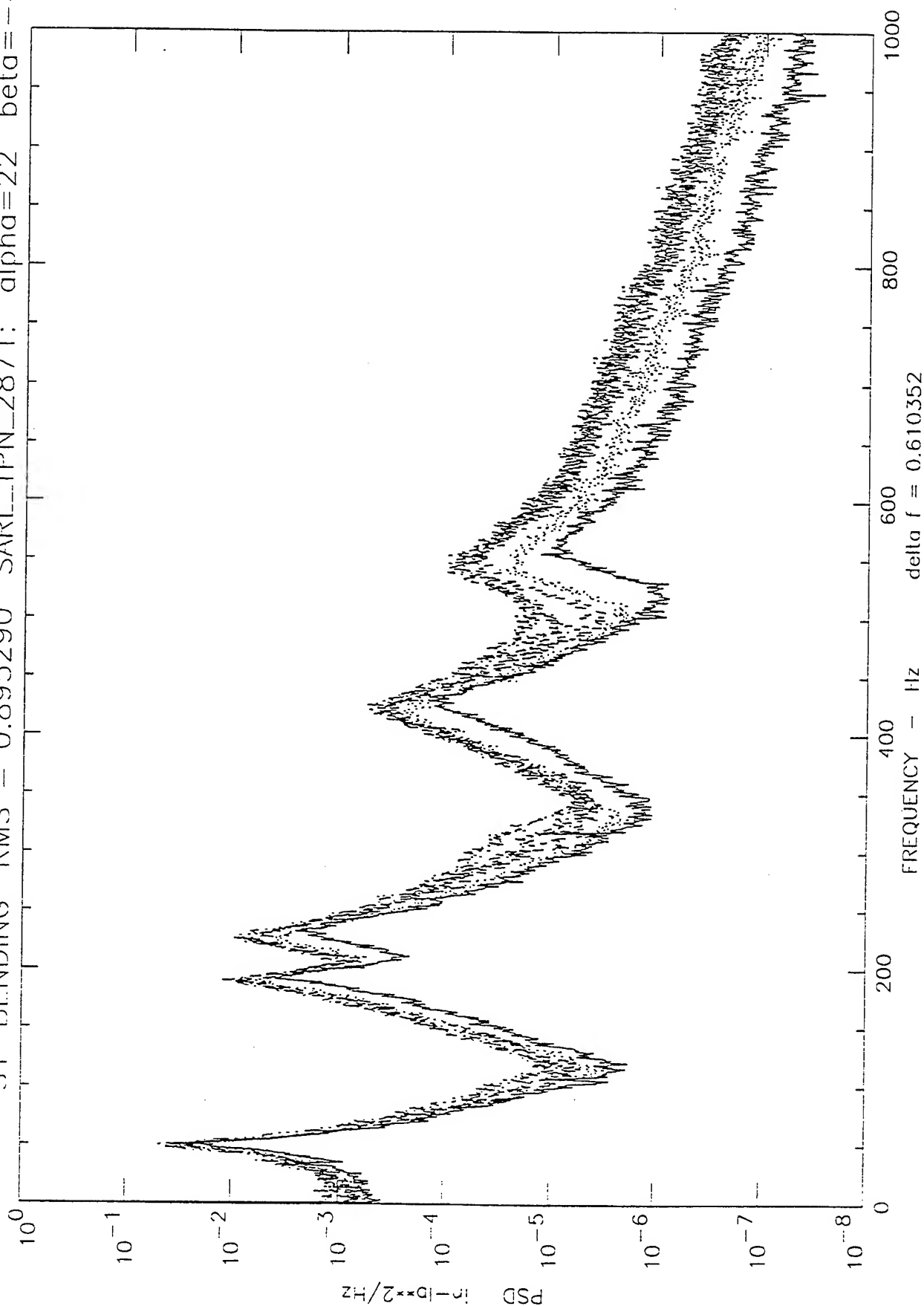


# F-15 Vertical Tail Buffet Test: Q=56, Flexible, to Blowing

---	S2-TORSION	RMS = 0.314384	SARL_TPN_2874:	alpha=32	beta=-4
---	S2-TORSION	RMS = 0.355982	SARL_TPN_2873:	alpha=28	beta=-4
---	S2-TORSION	RMS = 0.771799	SARL_TPN_2872:	alpha=24	beta=-4
---	S2-TORSION	RMS = 0.853800	SARL_TPN_2871:	alpha=22	beta=-4
---	S2-TORSION	RMS = 0.705337	SARL_TPN_2870:	alpha=20	beta=-4

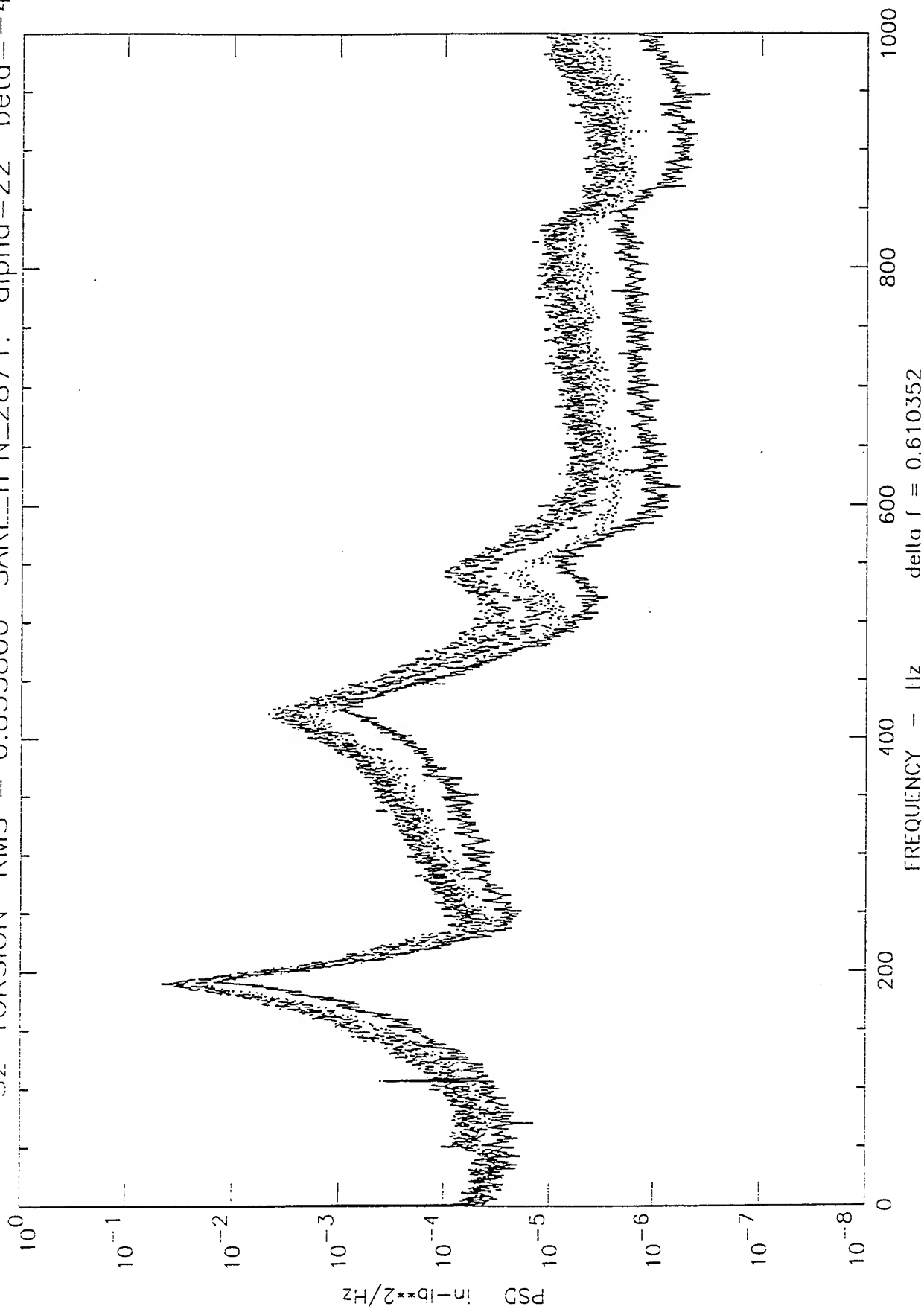


—	S1--BENDING	RMS = 0.547720	SARL_TPN_2925:	alpha=22	beta=4
---	S1--BENDING	RMS = 0.667947	SARL_TPN_2907:	alpha=22	beta=2
- - -	S1--BENDING	RMS = 0.737765	SARL_TPN_2851:	alpha=22	beta=0
- - -	S1--BENDING	RMS = 0.794578	SARL_TPN_2889:	alpha=22	beta=-2
- - -	S1--BENDING	RMS = 0.895290	SARL_TPN_2871:	alpha=22	beta=-4



# F-15 Vertical Tail Buffet Test: Q=56, Flexible, to Blowing

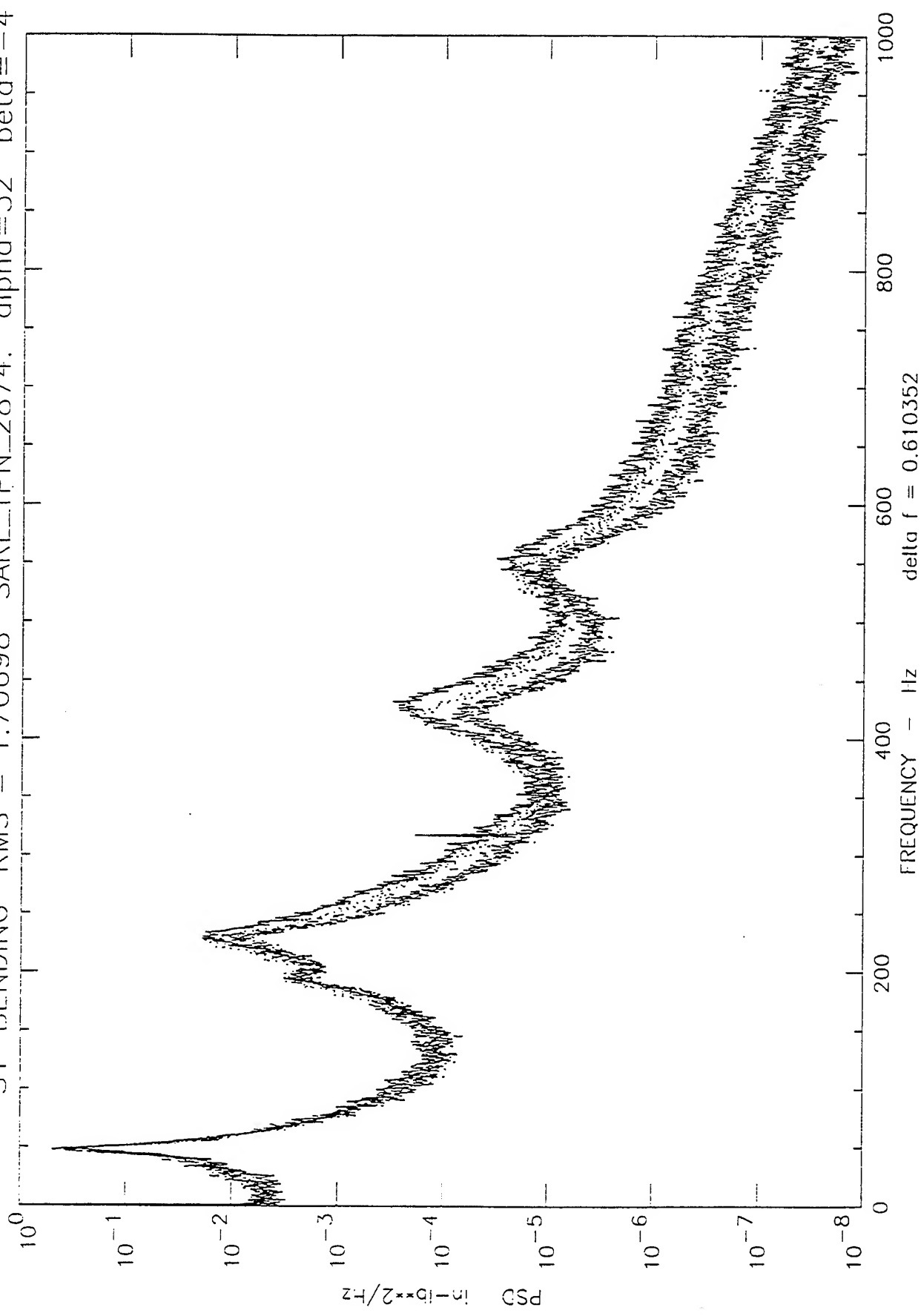
.....	S2-TORSION	RMS = 0.469019	SARL_TPN_2925:	alpha=22	beta=4
.....	S2-TORSION	RMS = 0.615949	SARL_TPN_2907:	alpha=22	beta=2
-----	S2-TORSION	RMS = 0.724955	SARL_TPN_2851:	alpha=22	beta=0
.....	S2-TORSION	RMS = 0.824149	SARL_TPN_2889:	alpha=22	beta=-2
-----	S2-TORSION	RMS = 0.853800	SARL_TPN_2871:	alpha=22	beta=-4





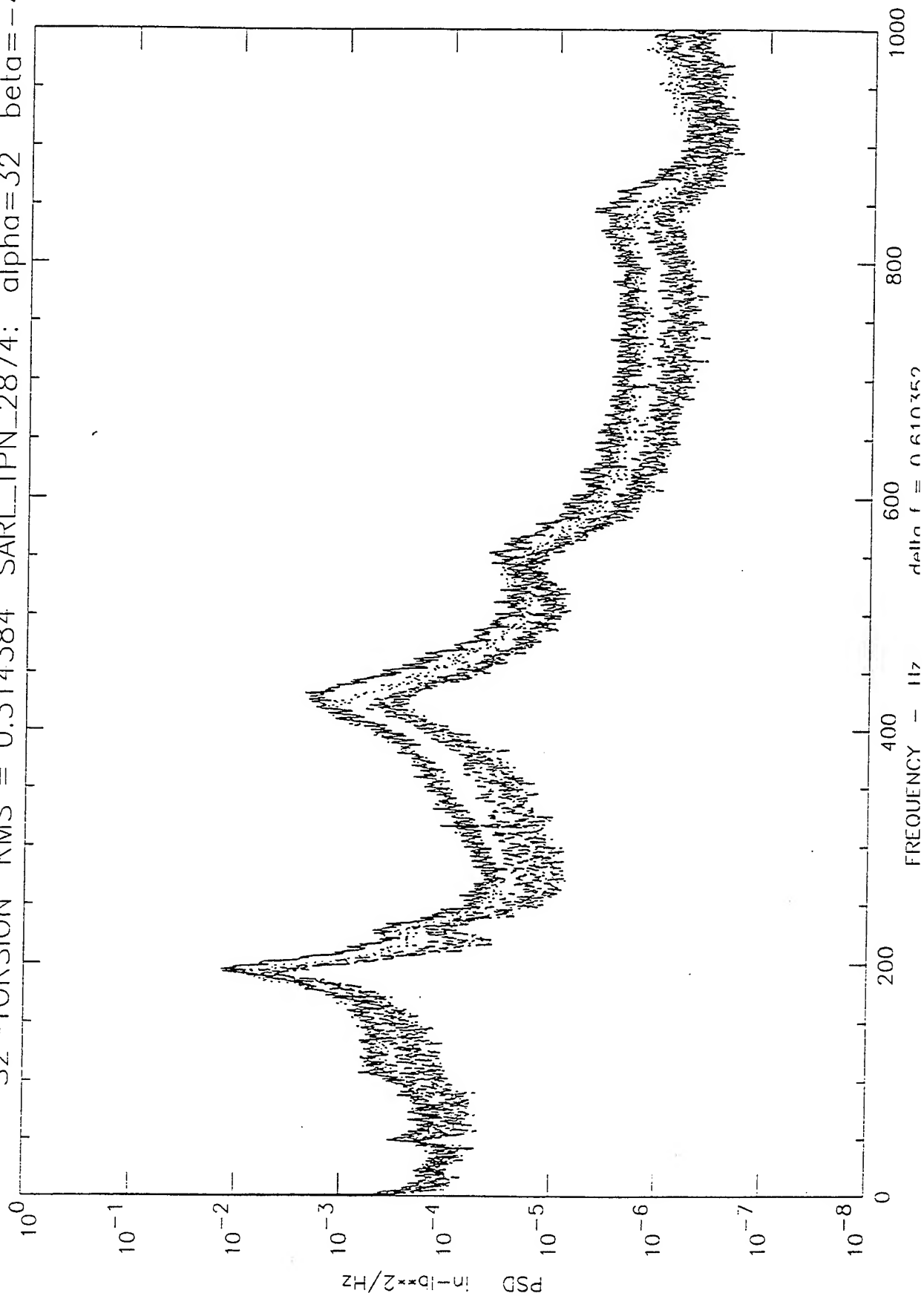
F-15 Critical Tail Buffet Test: Q=56, Flexible, to Blowing

---	S1--BENDING	RMS = 1.62116	SARL_TPN_2928:	alpha=32	beta=4
---	S1--BENDING	RMS = 1.65275	SARL_TPN_2910:	alpha=32	beta=2
---	S1--BENDING	RMS = 1.79350	SARL_TPN_2854:	alpha=32	beta=0
---	S1--BENDING	RMS = 1.74785	SARL_TPN_2892:	alpha=32	beta=-2
---	S1--BENDING	RMS = 1.70698	SARL_TPN_2874:	alpha=32	beta=-4



F-15 Vertical Tail Buffet Test: Q=56, Flexible, to Blowing

.....	S2-TORSION	RMS = 0.563100	SARL_TPN_2928:	alpha=32	beta=4
.....	S2-TORSION	RMS = 0.499794	SARL_TPN_2910:	alpha=32	beta=2
-----	S2-TORSION	RMS = 0.378736	SARL_TPN_2854:	alpha=32	beta=0
-----	S2-TORSION	RMS = 0.332417	SARL_TPN_2892:	alpha=32	beta=-2
-----	S2-TORSION	RMS = 0.314384	SARL_TPN_2874:	alpha=32	beta=-4

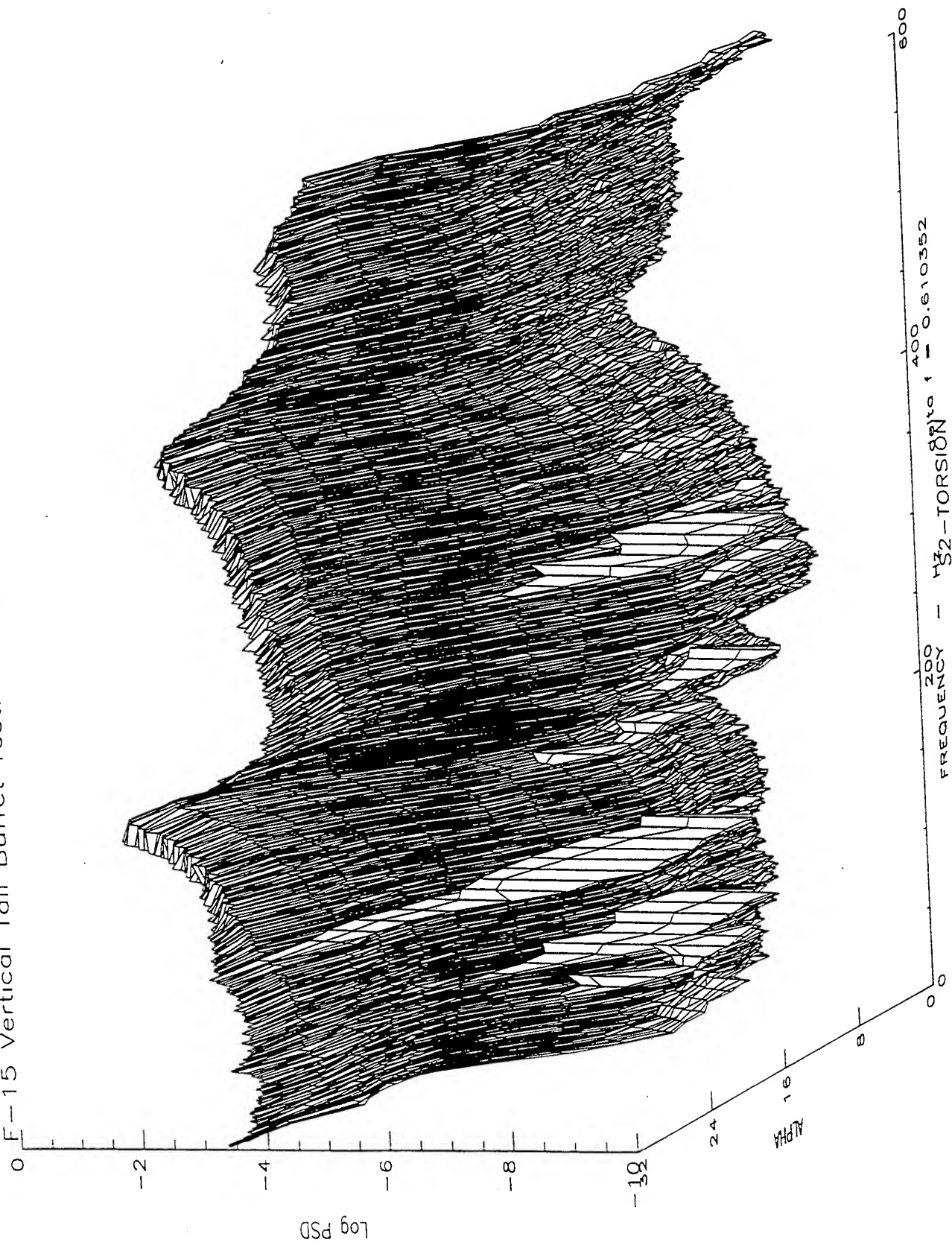


FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION  
PSD's in 3D\*

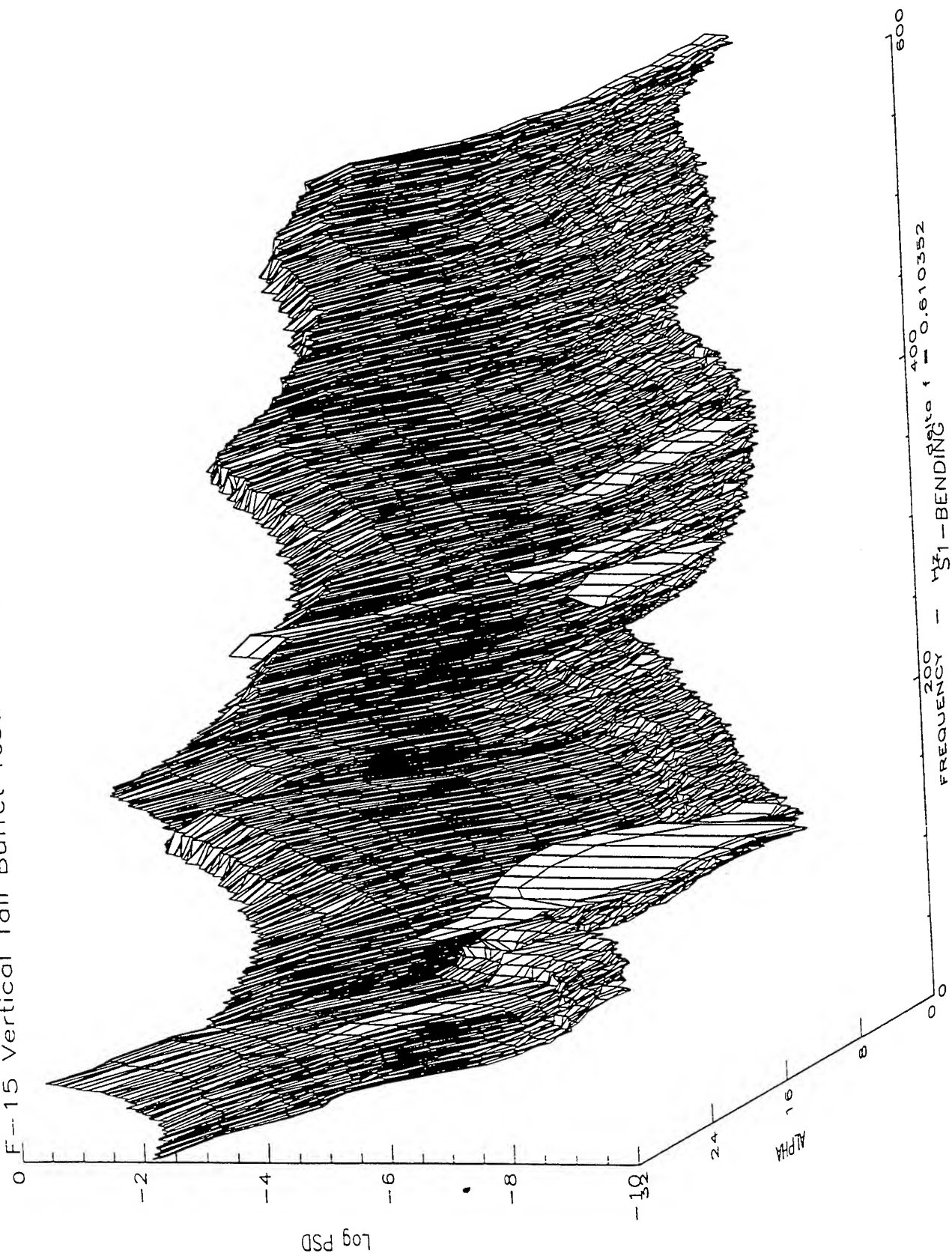
Q = 56 PSF  
WBP = 0, 45, 65 PSI  
BETA = 0, +4, -4 Deg  
ALPHA = 0.....32 Deg

\* PSD vs. freq vs ALPHA

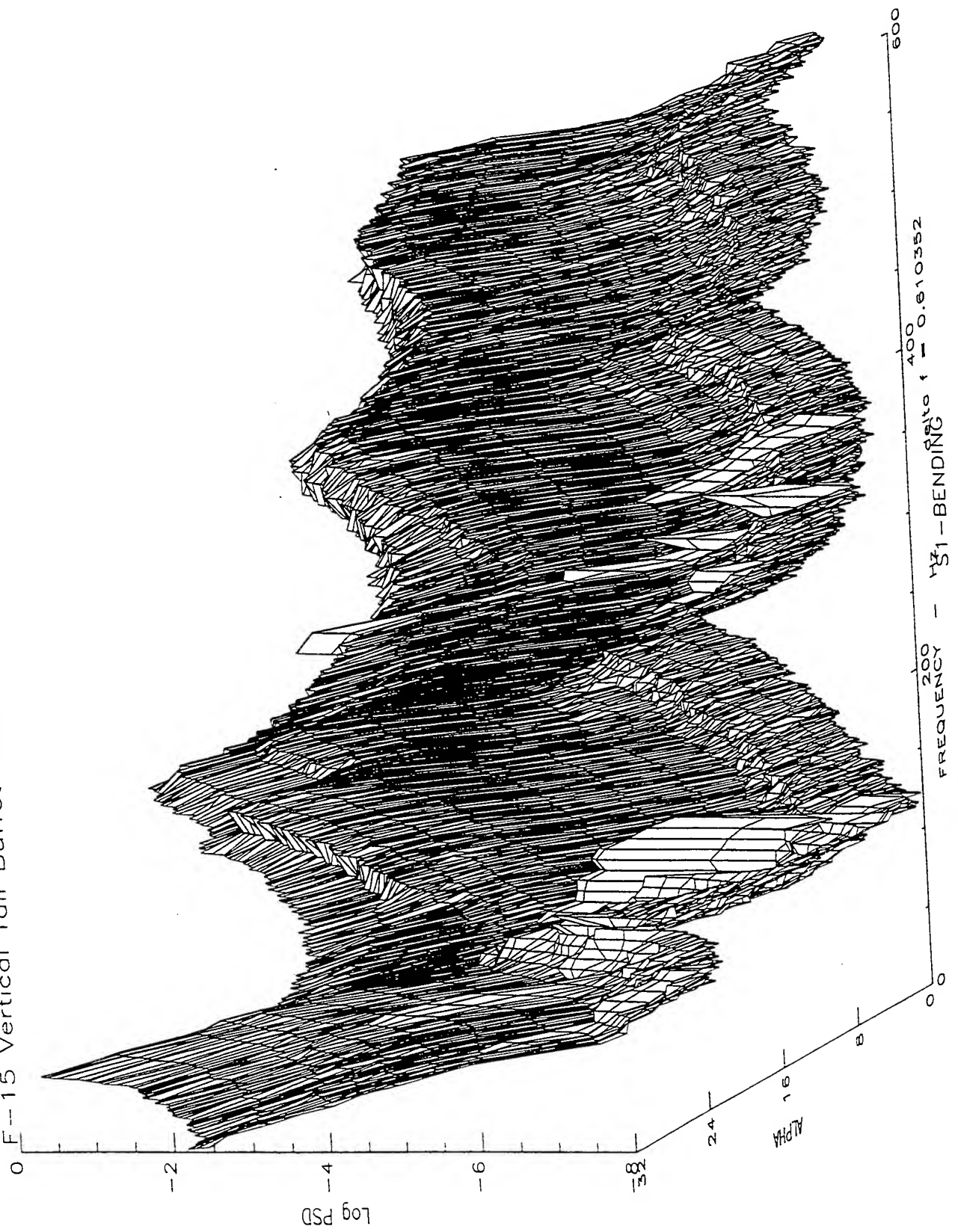
F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $Beta=4$



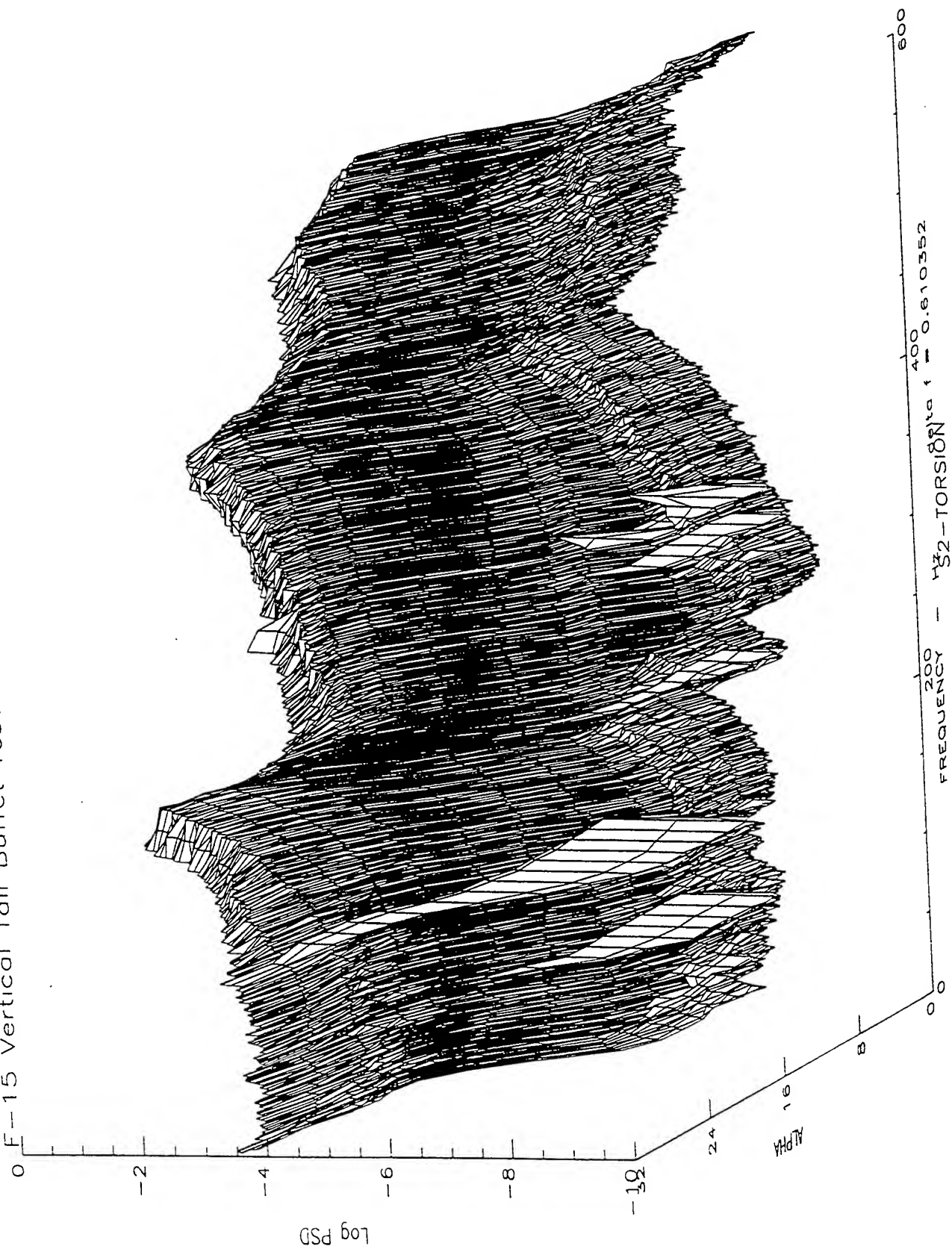
0 F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $Beta=4$



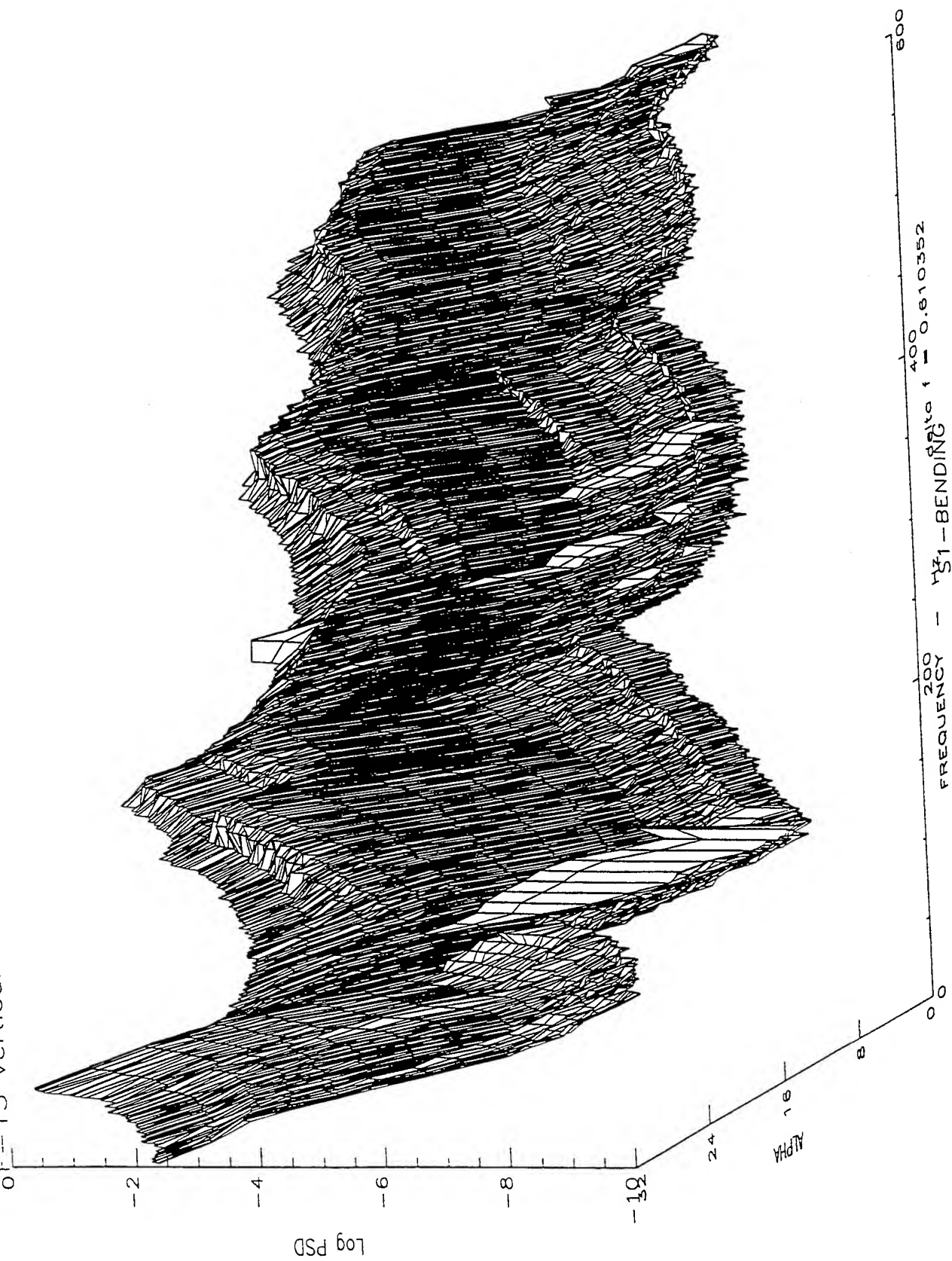
0 F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=0$



0 F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=0$

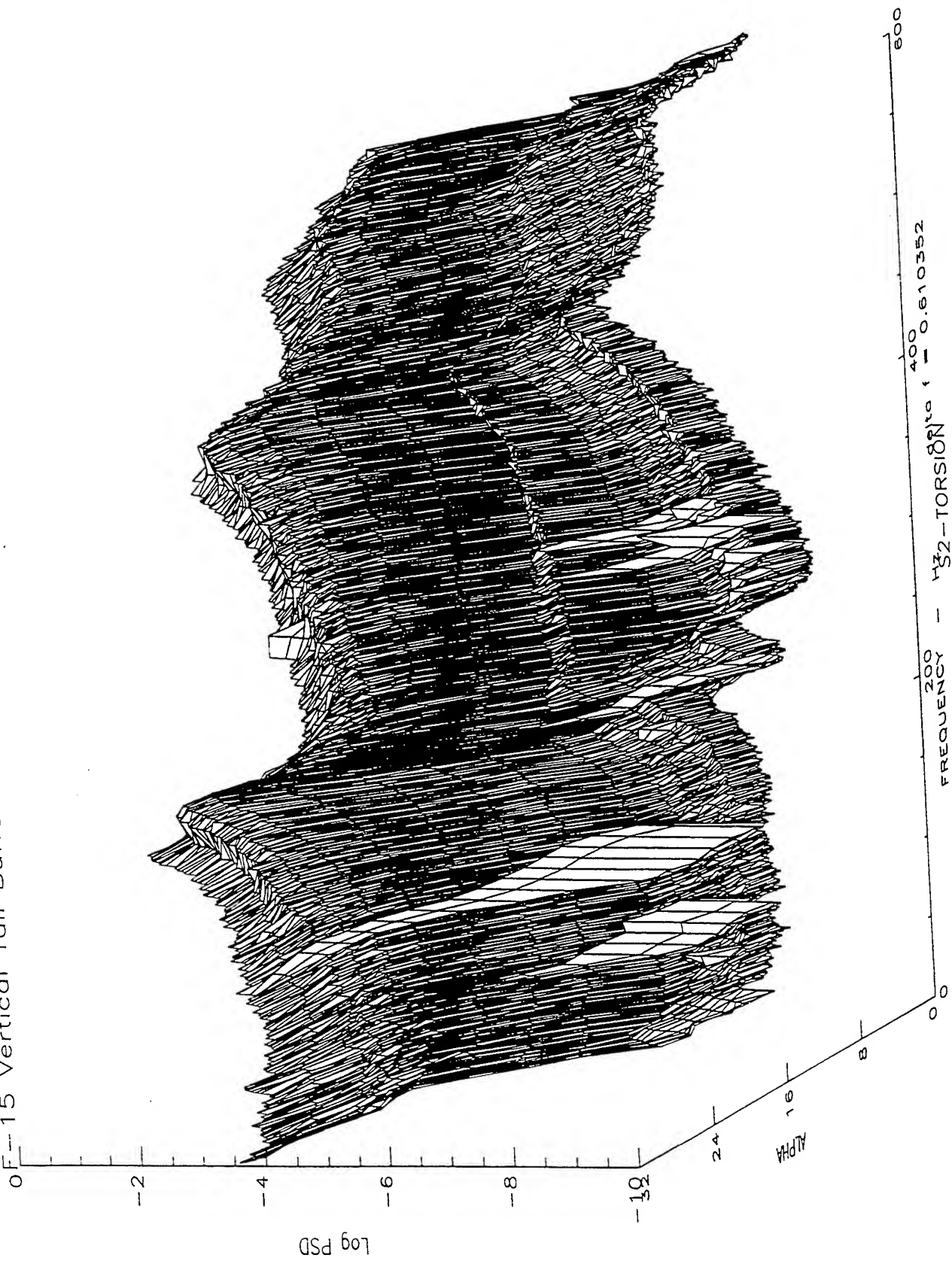


0F--15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing, Beta=-4

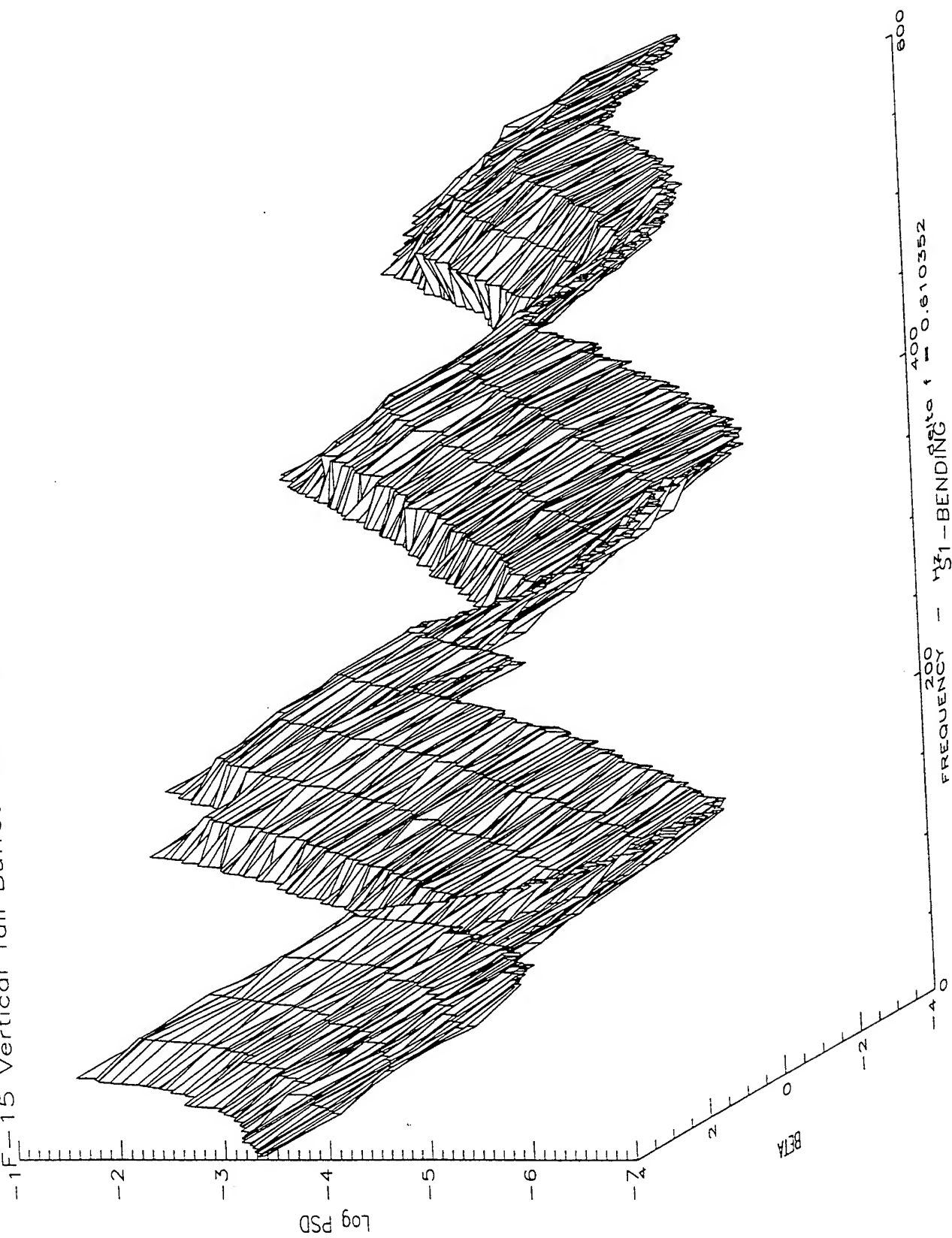




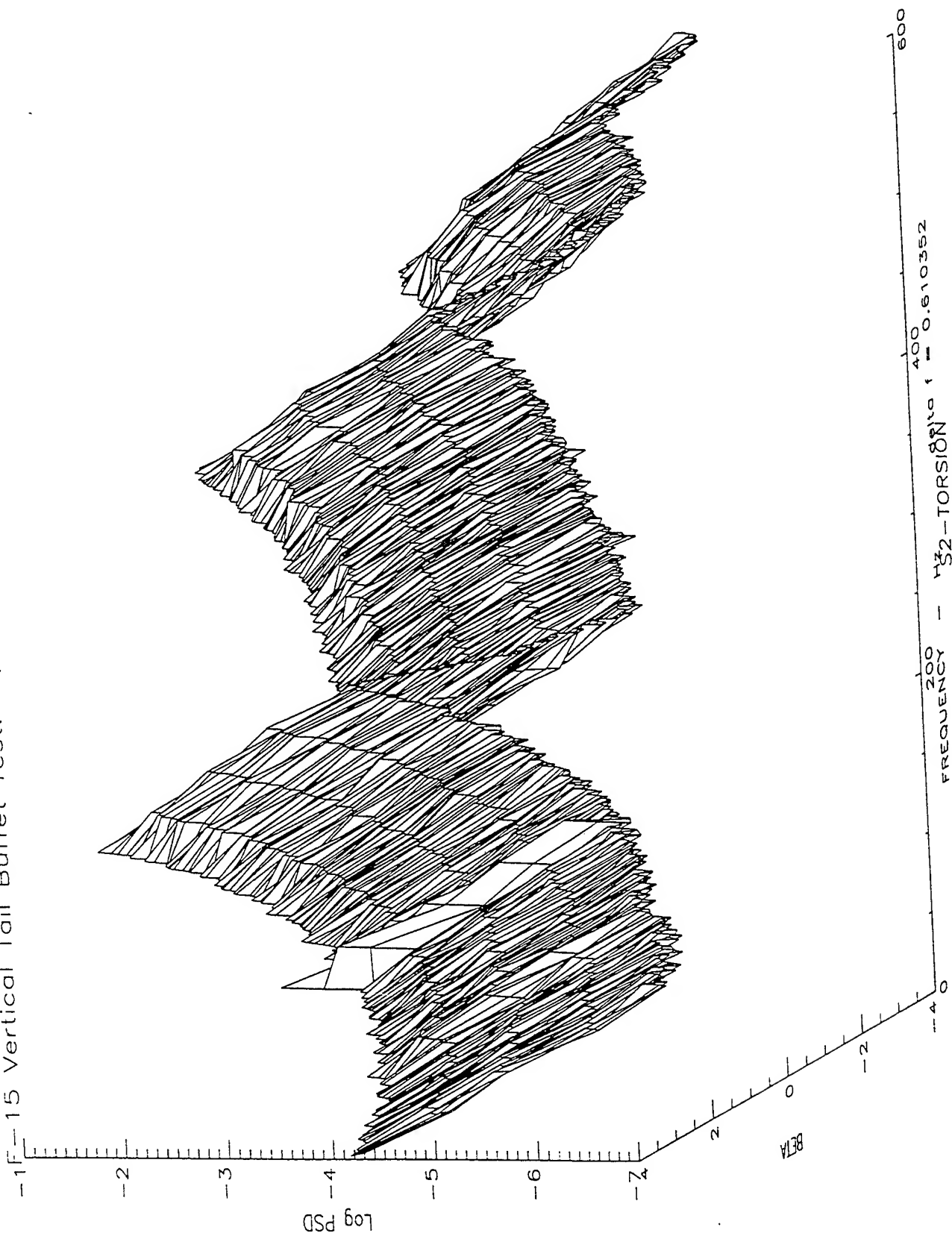
OF-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=-4$



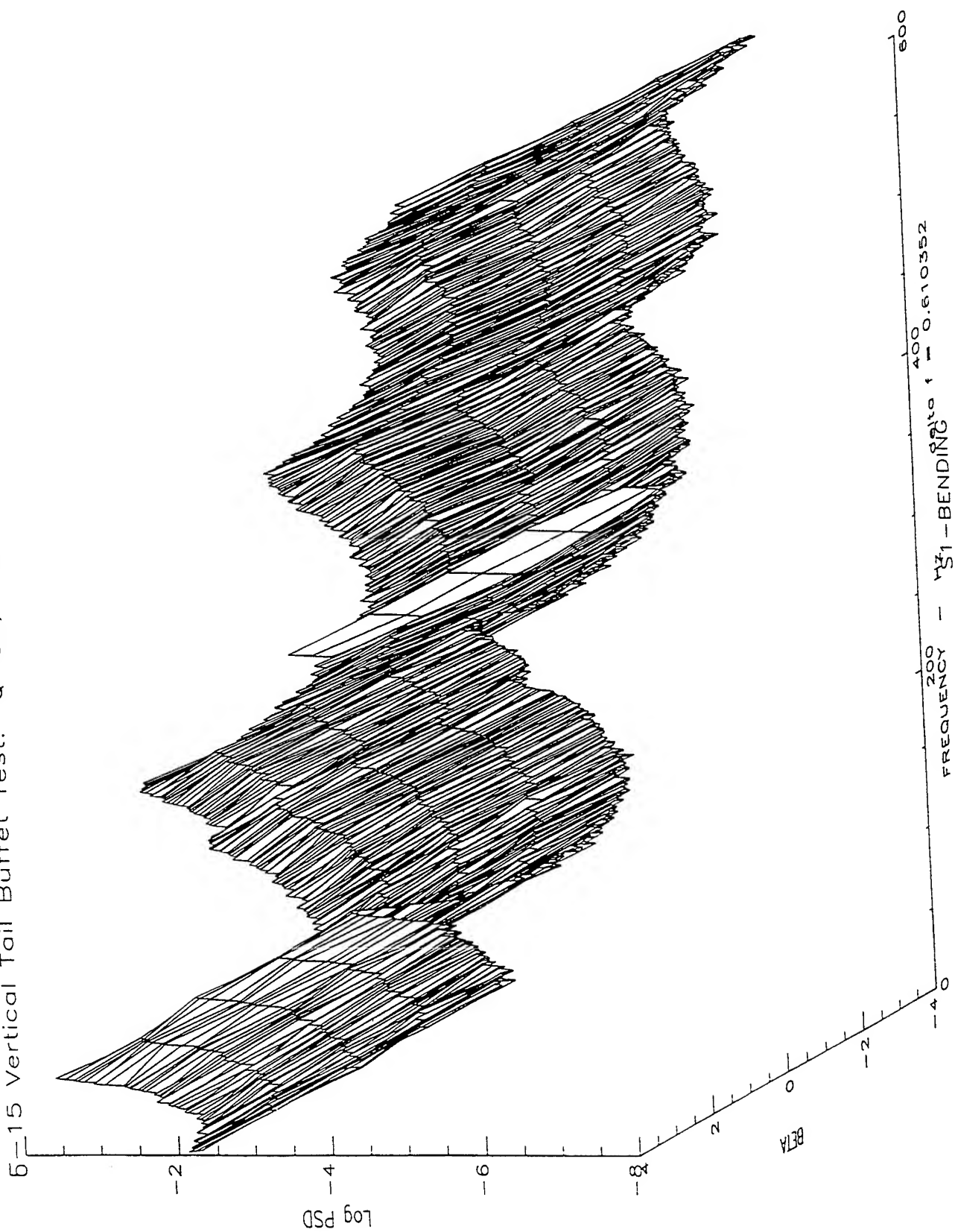
-1F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing, Alpha=22



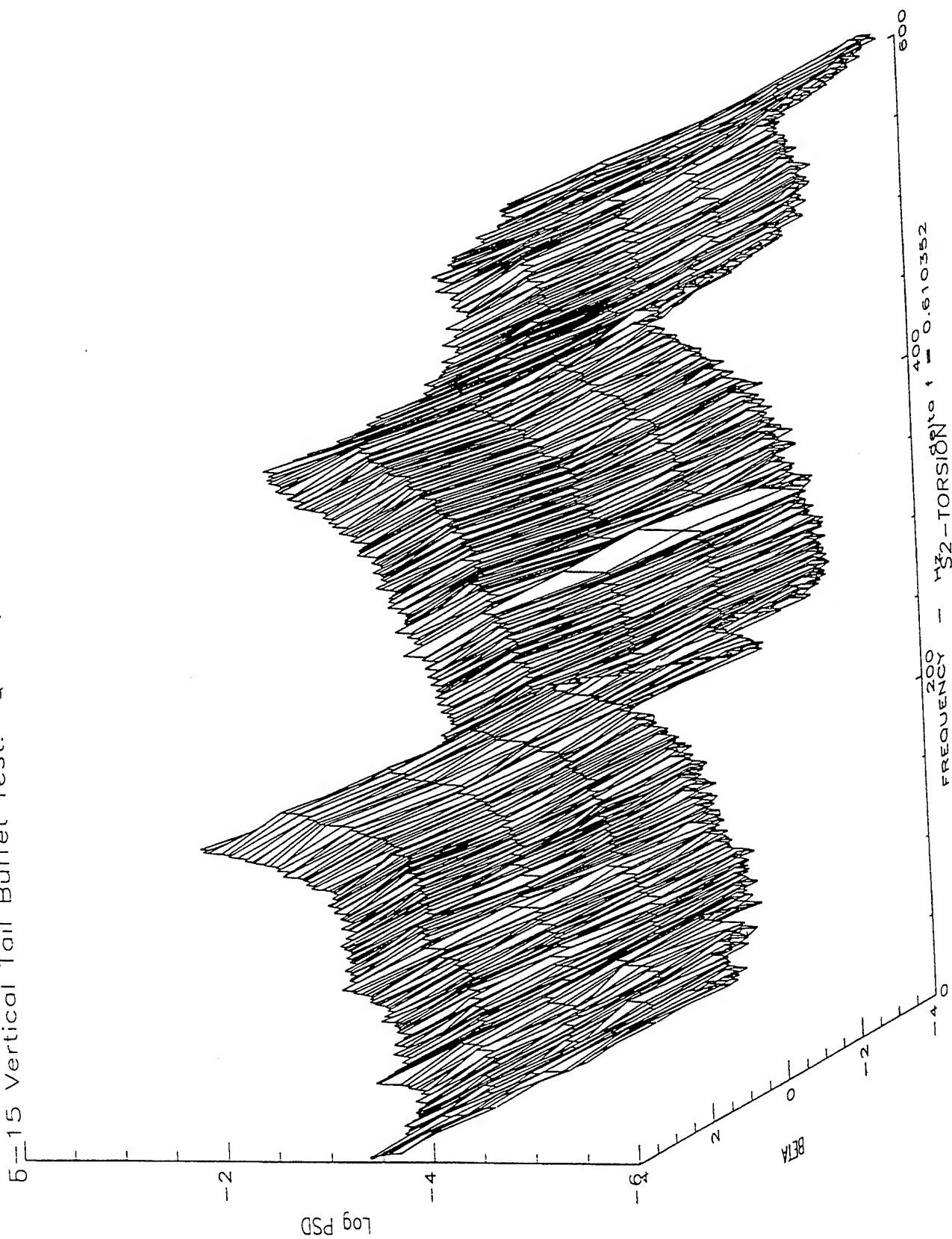
-1F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing, Alpha=22



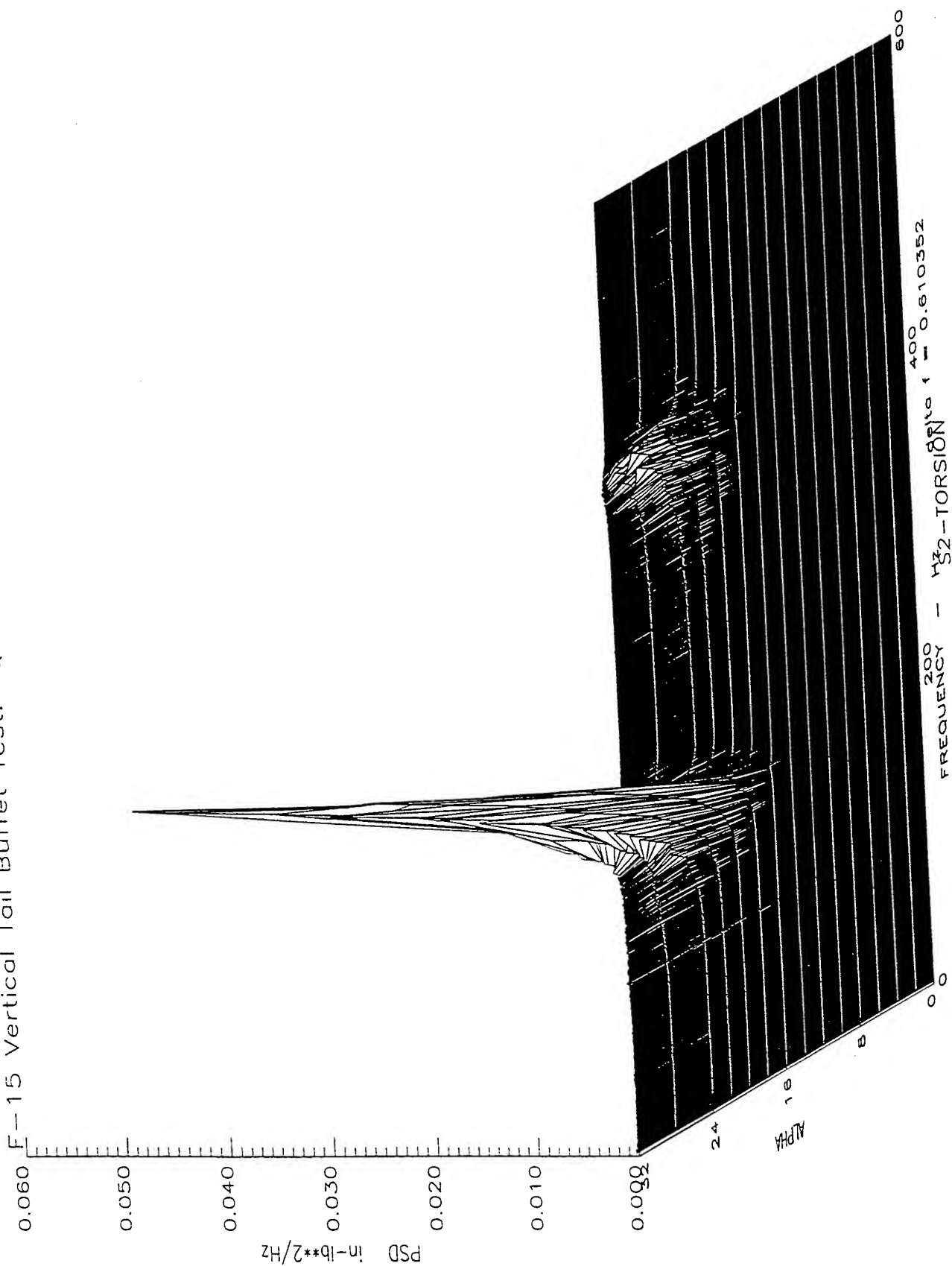
5-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\alpha = 32$



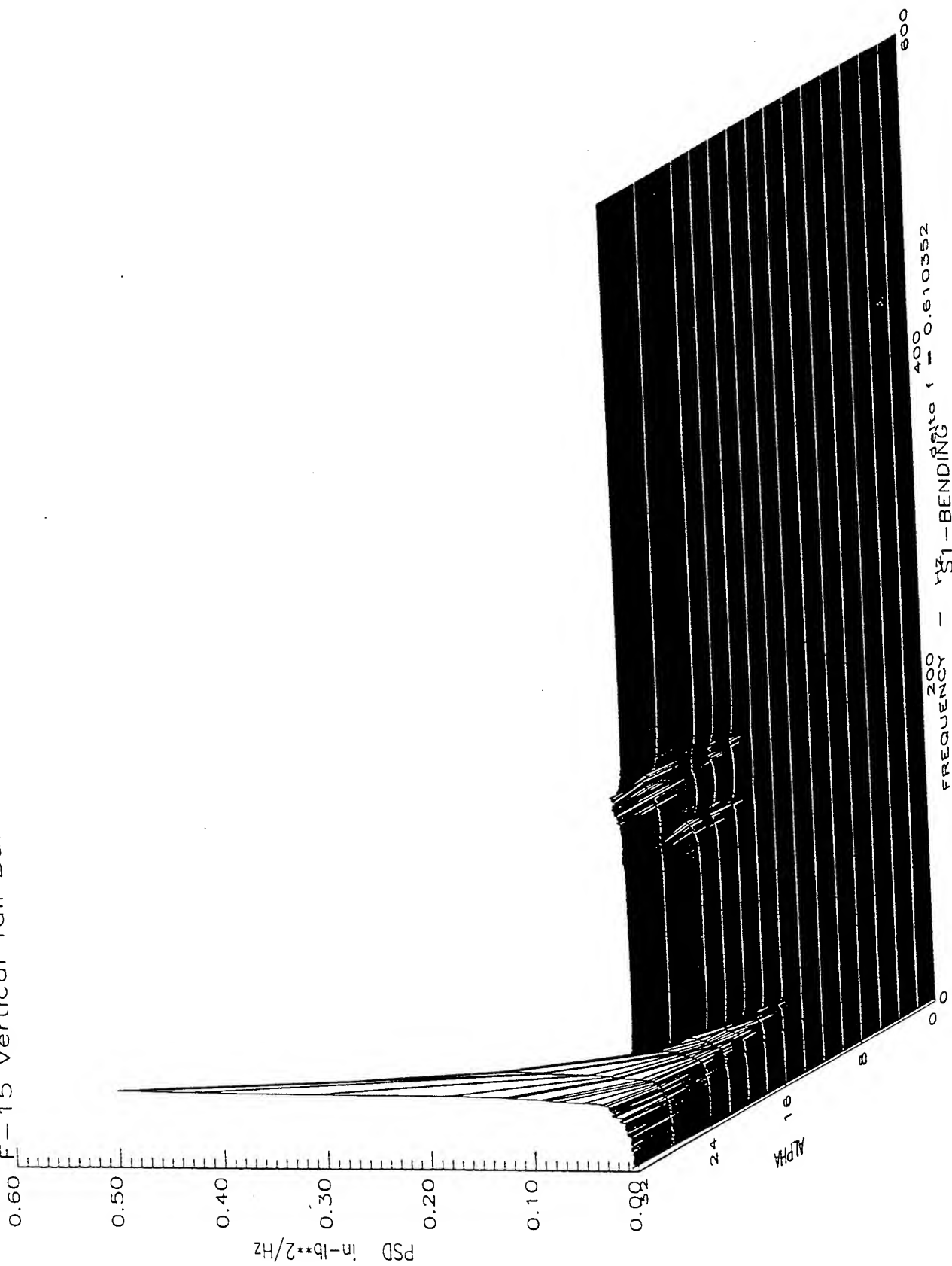
5-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Alpha} = 32$



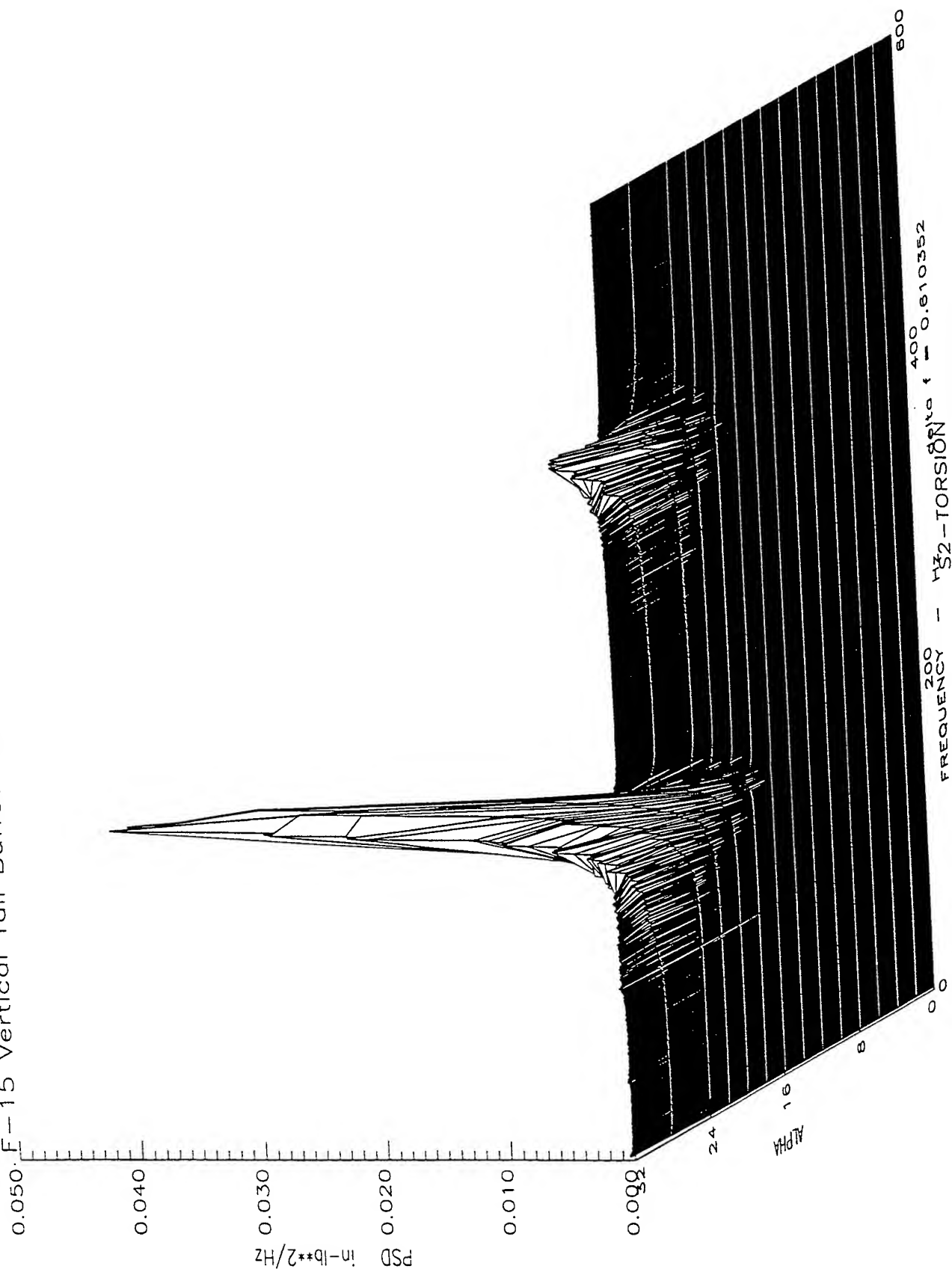
F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=0$



F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=0$

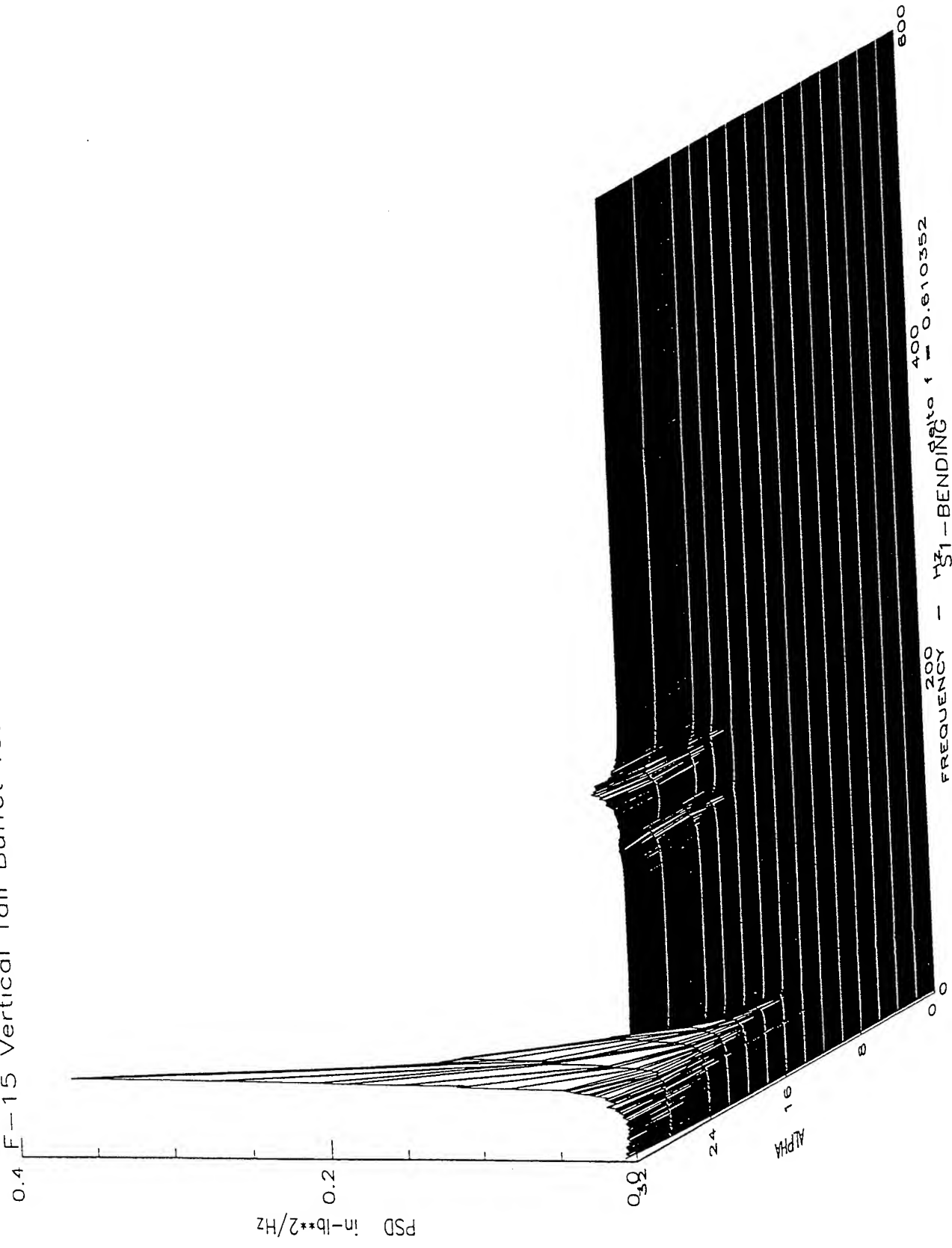


F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $Beta=4$

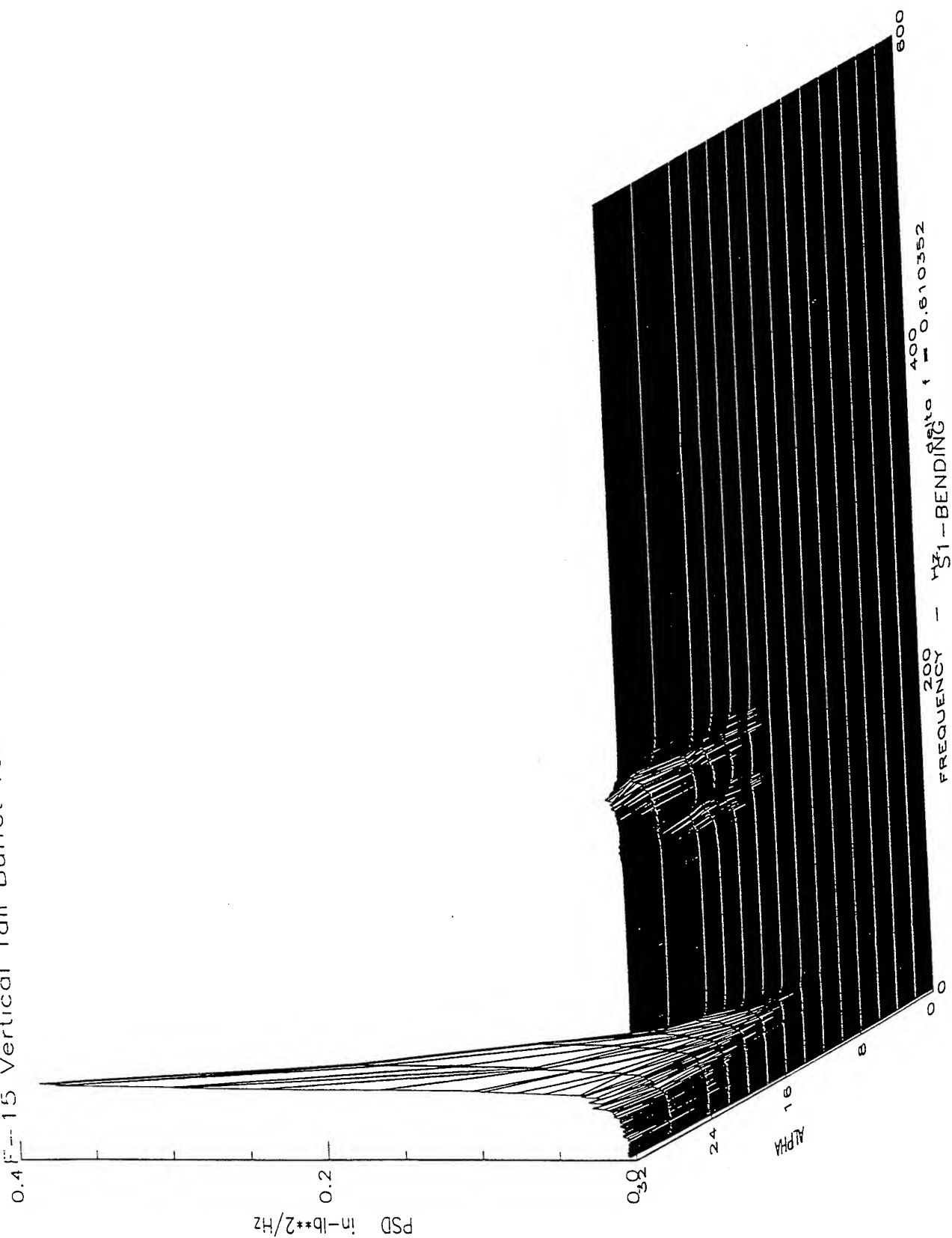




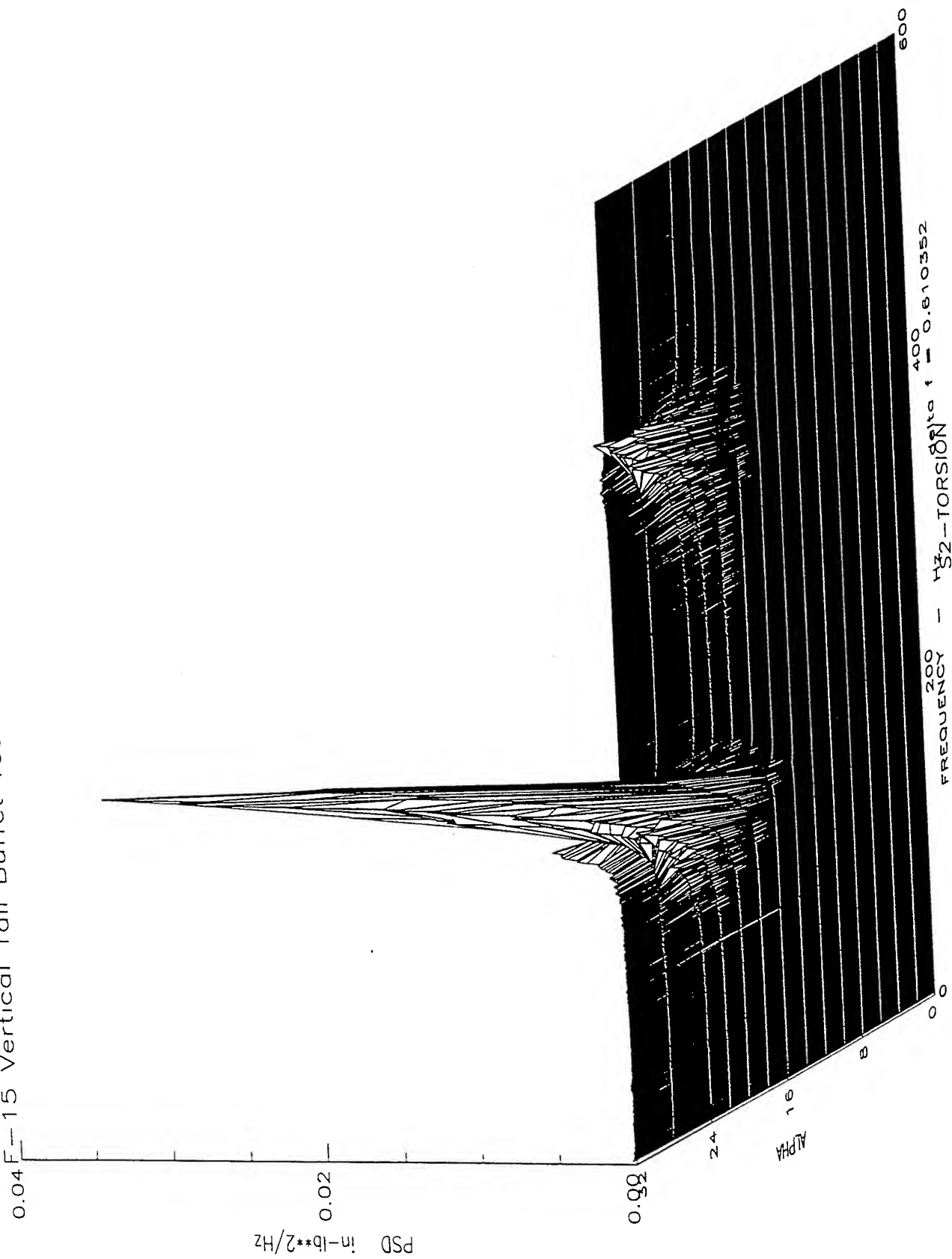
0.4 F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $Beta=4$



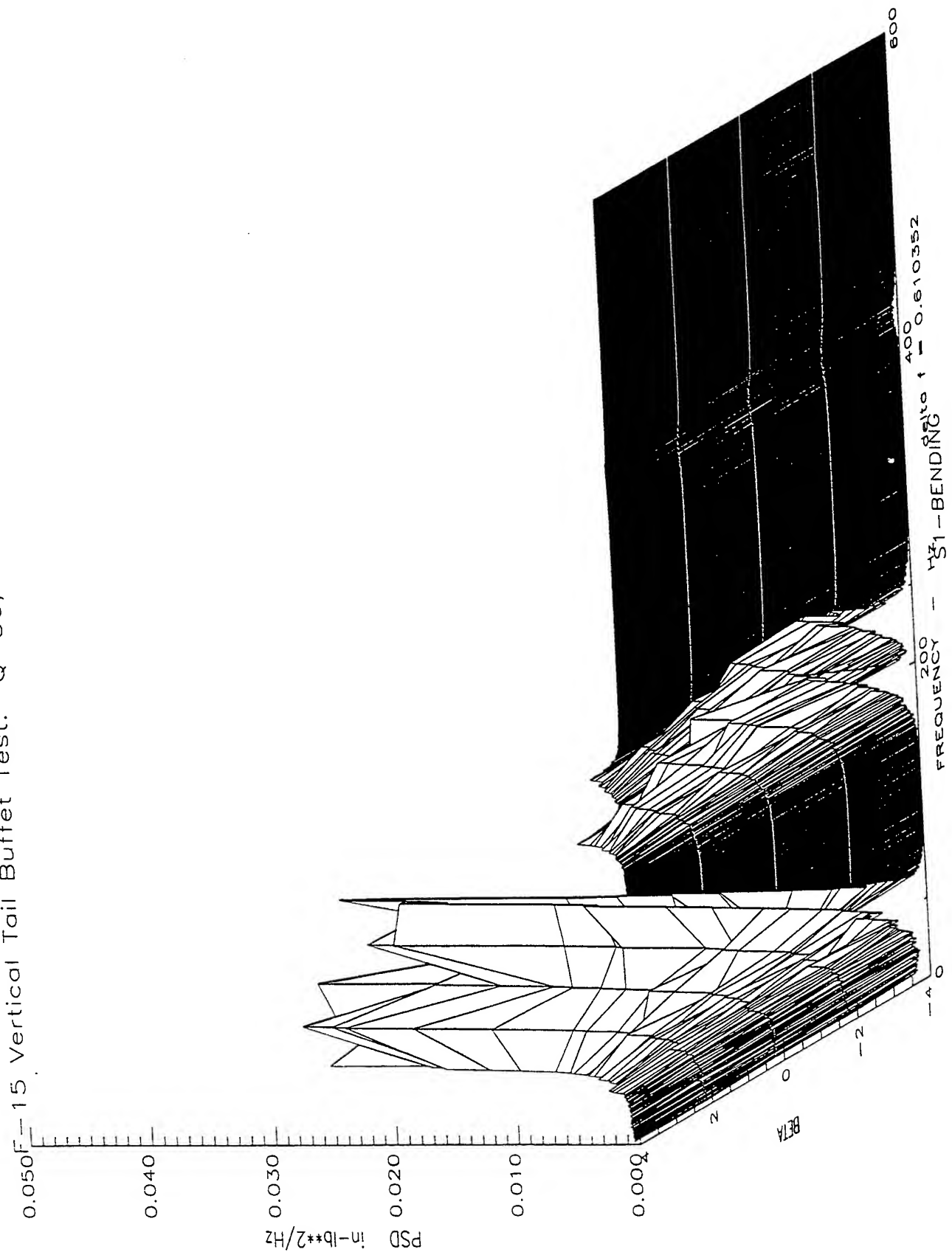
0.4 F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=-4$



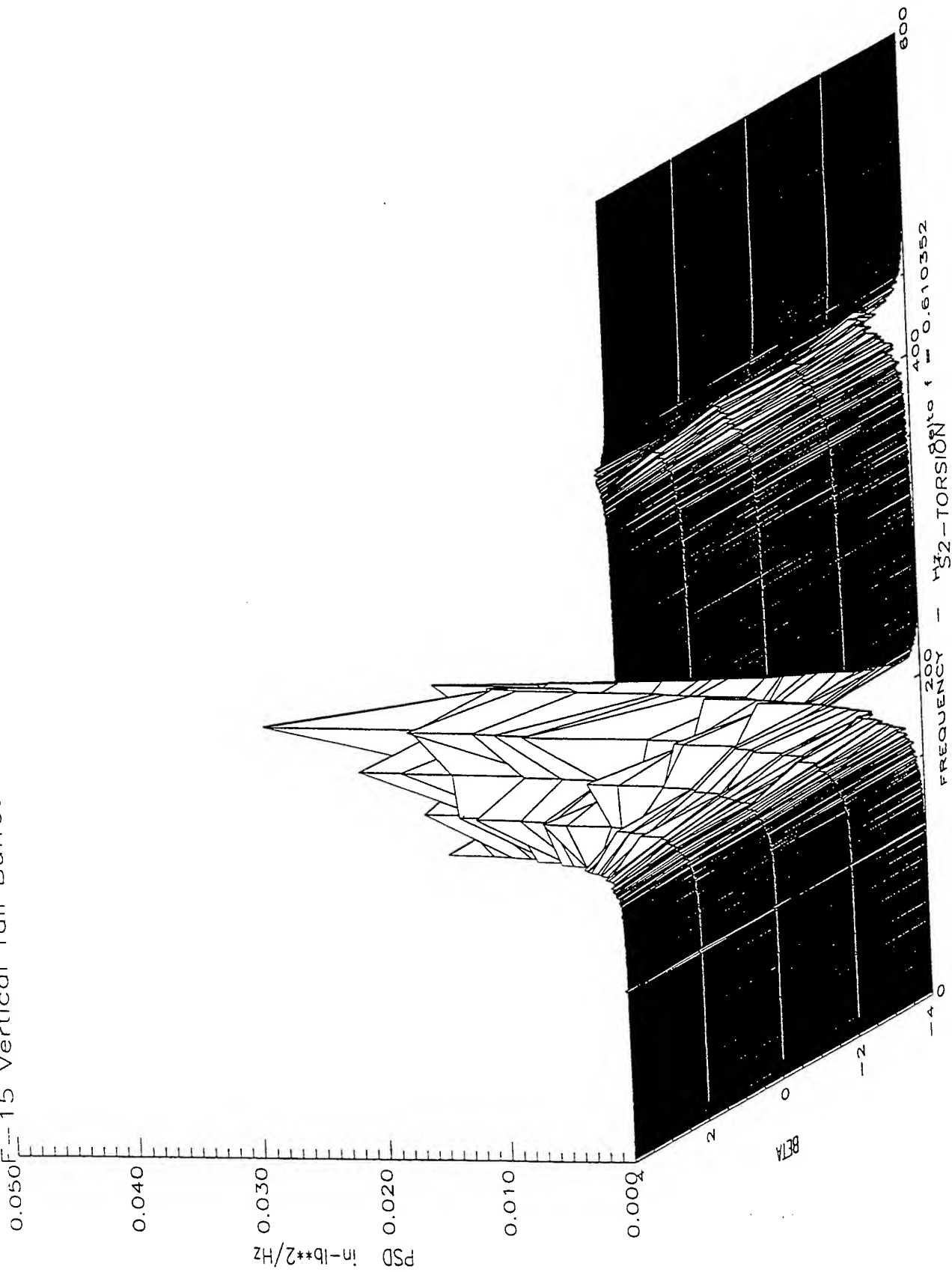
0.04 F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=-4$



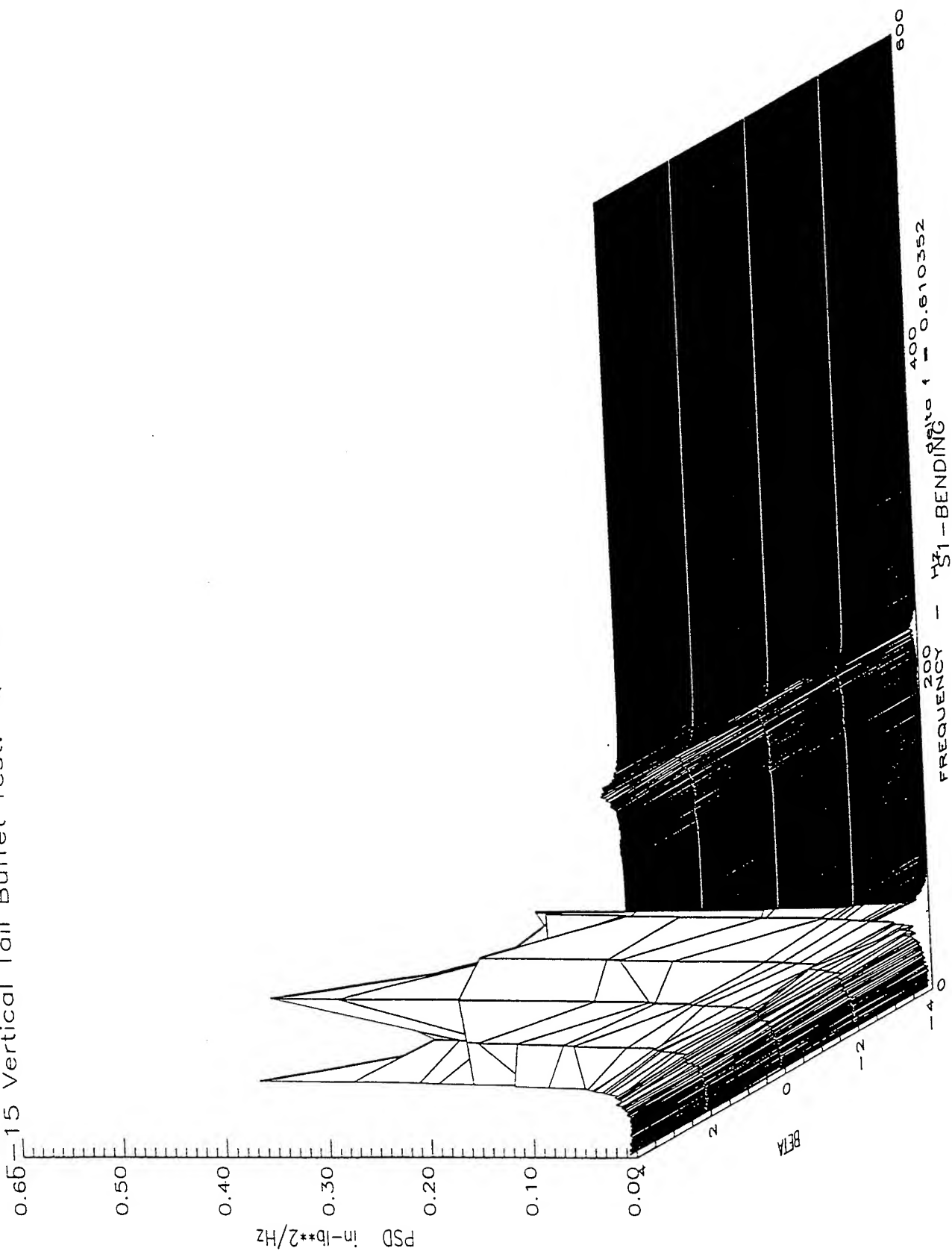
F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\alpha=22^\circ$



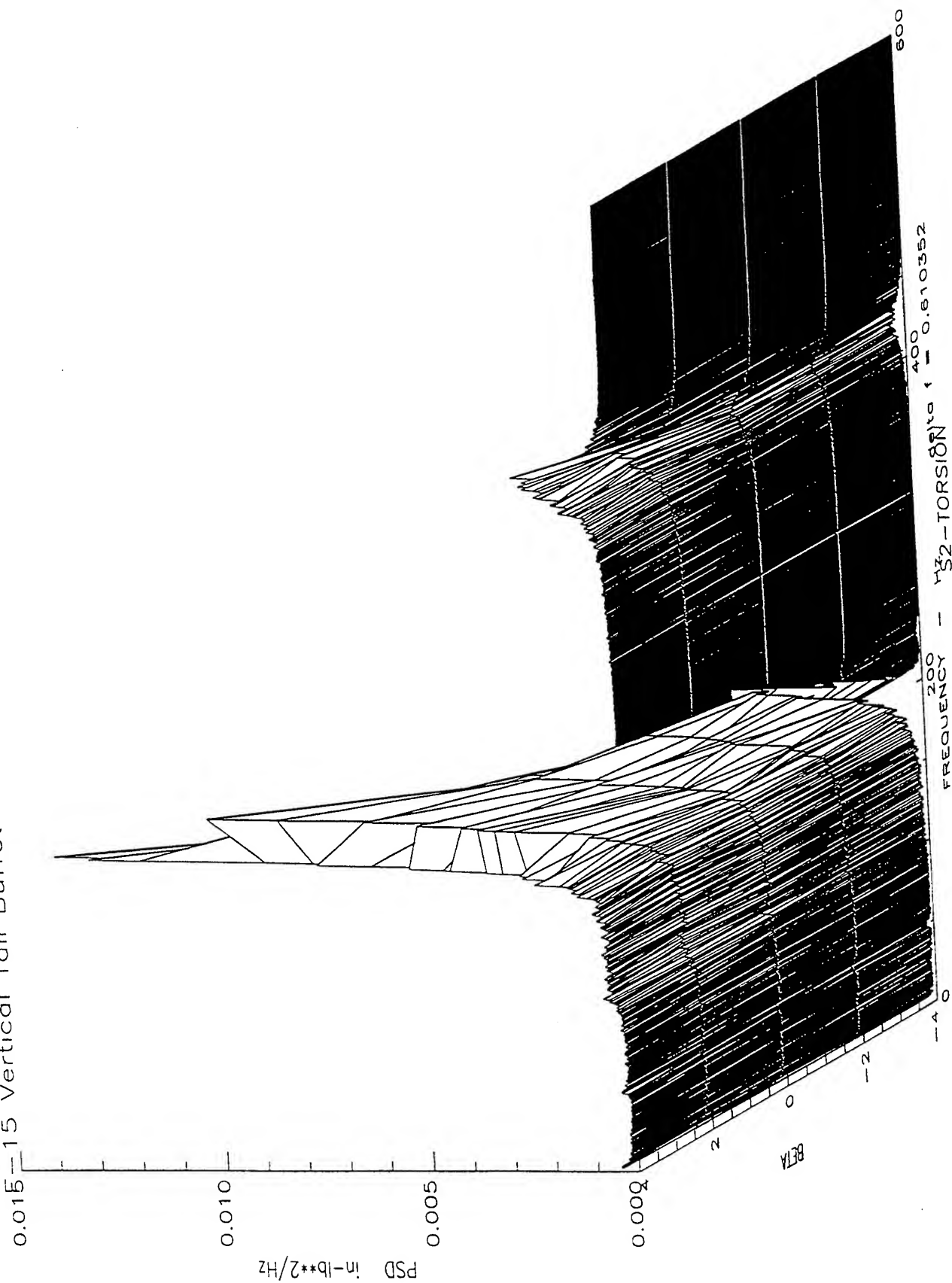
0.050F--15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing, Alpha=22



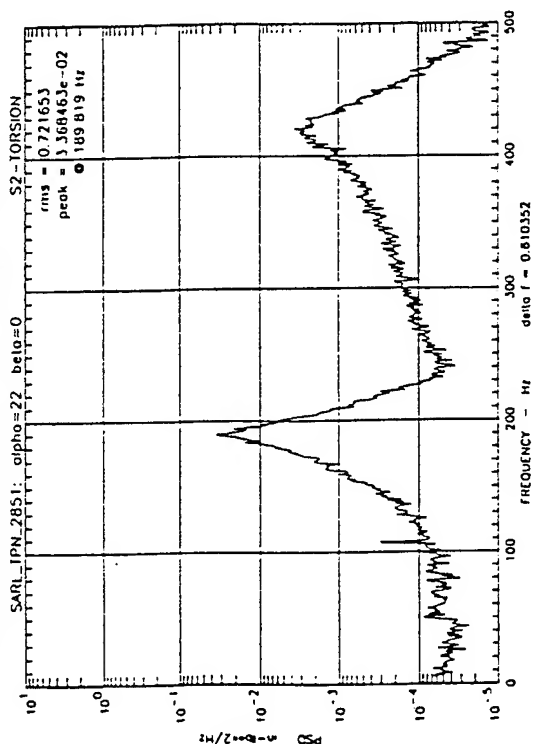
0.65-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Alpha} = 32$



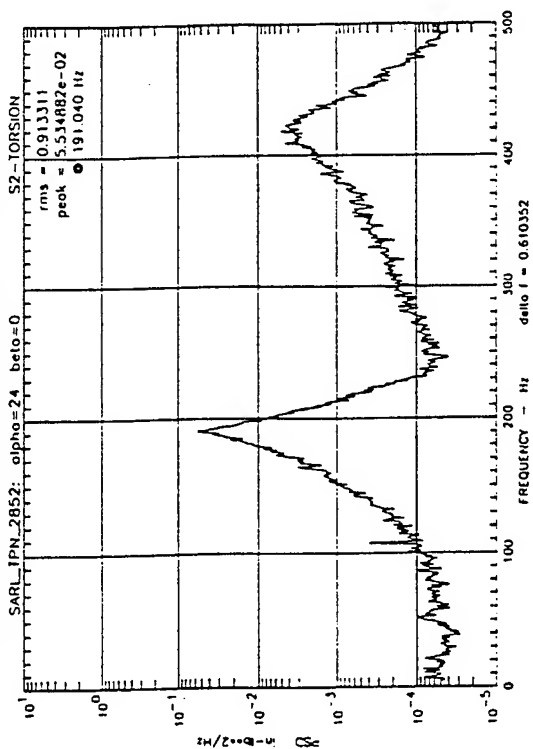
0.015 - 15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\alpha = 32$



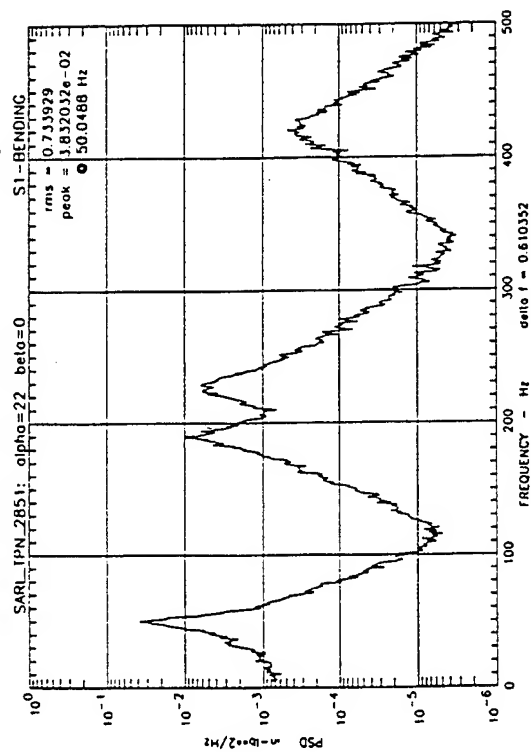
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



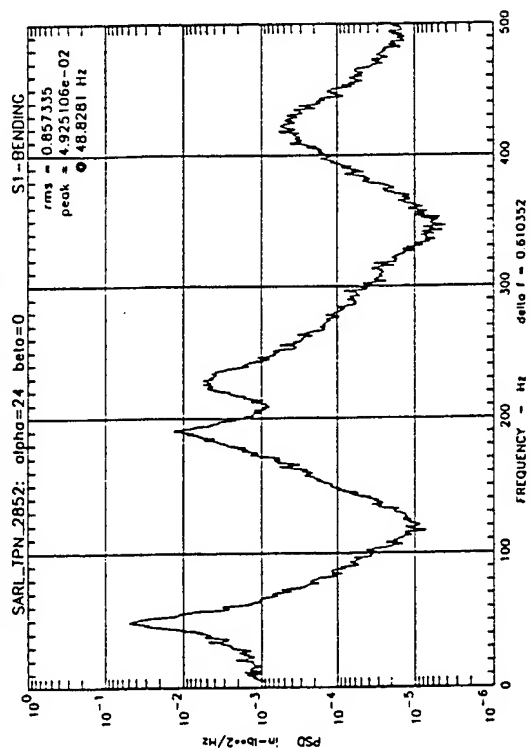
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing

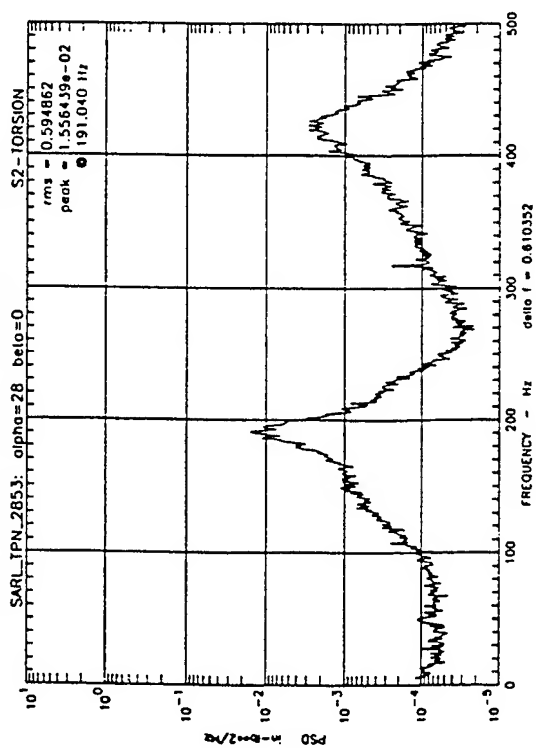


F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing

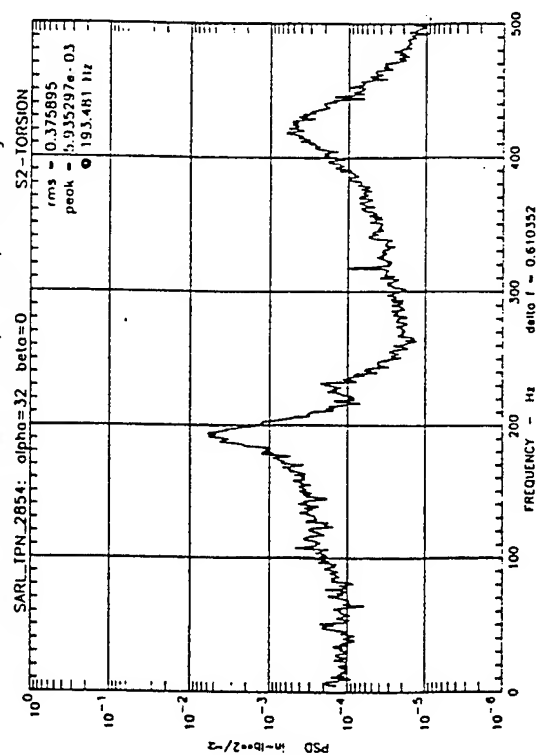




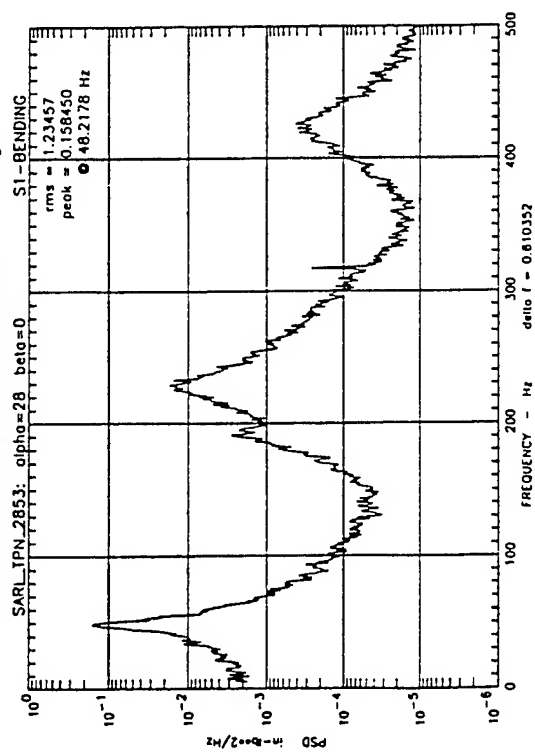
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



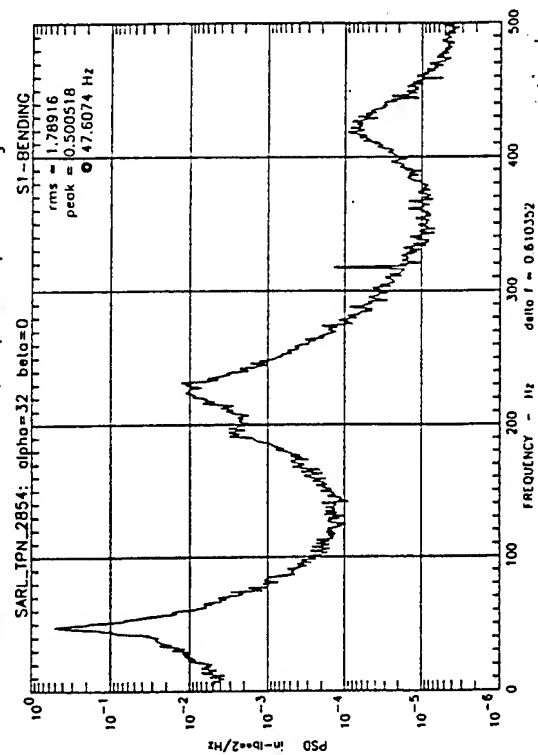
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



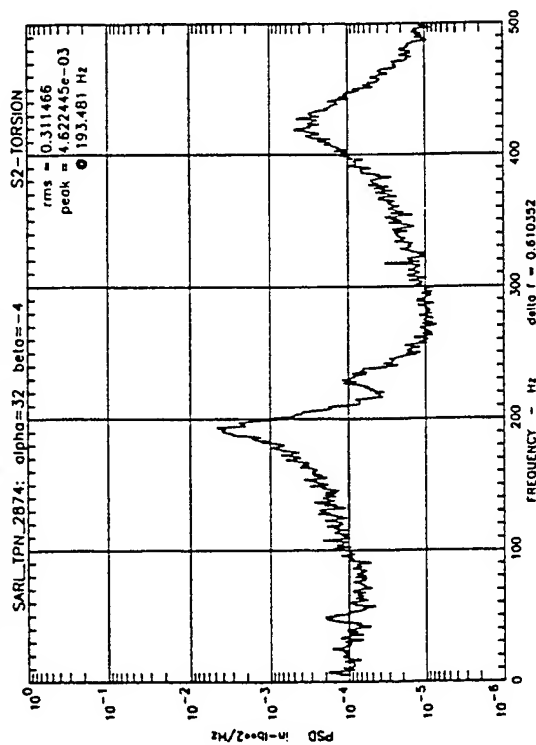
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



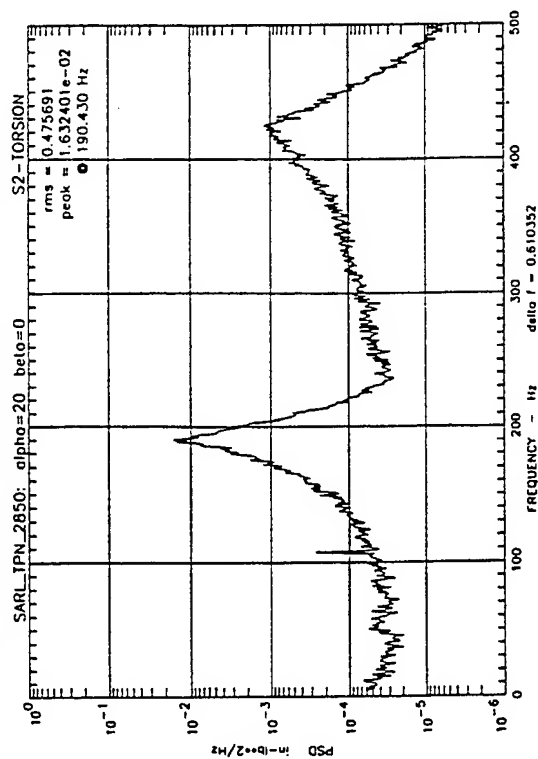
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



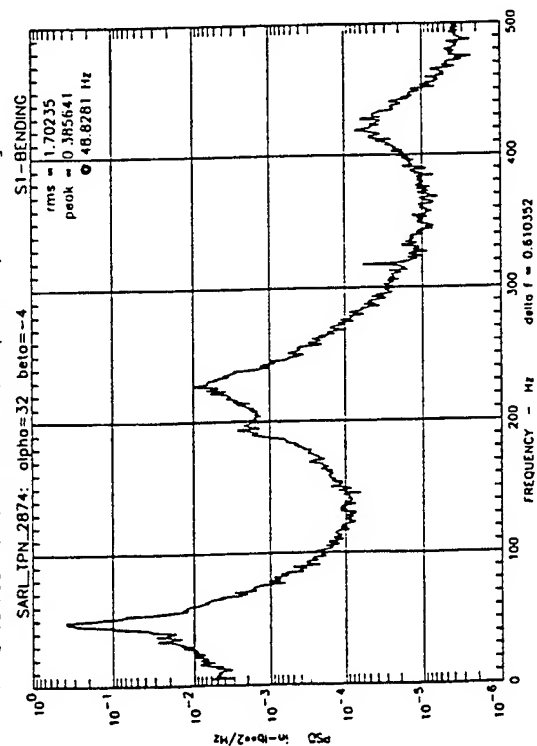
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



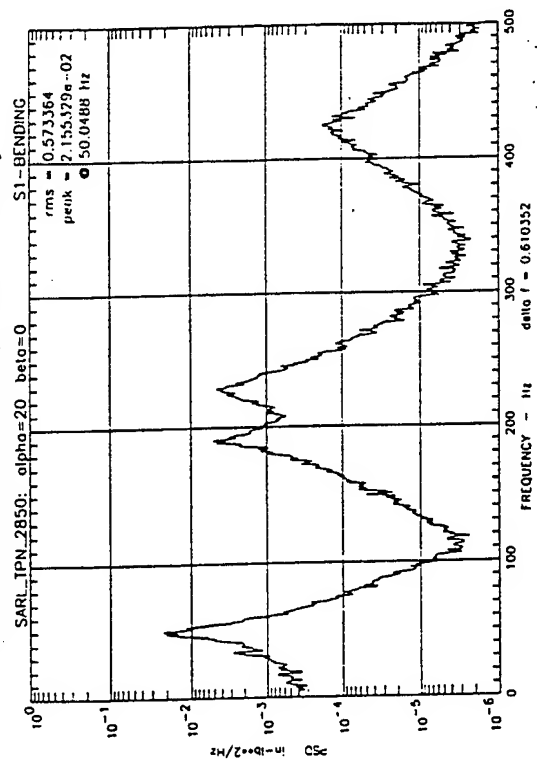
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



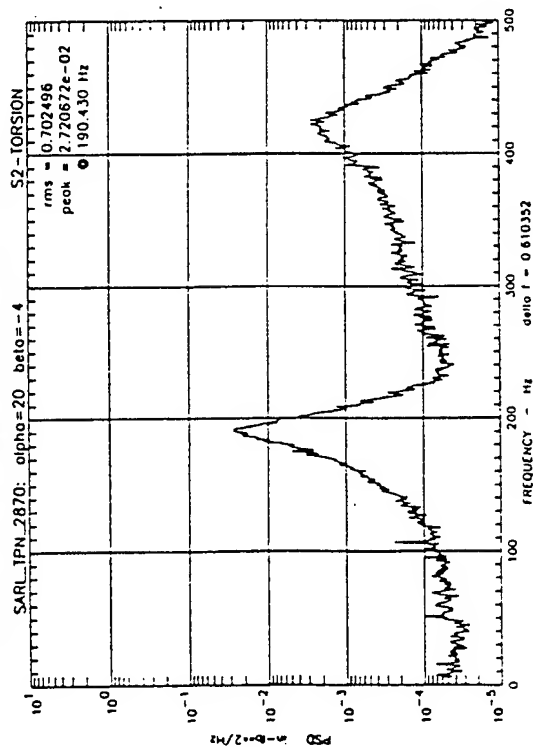
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



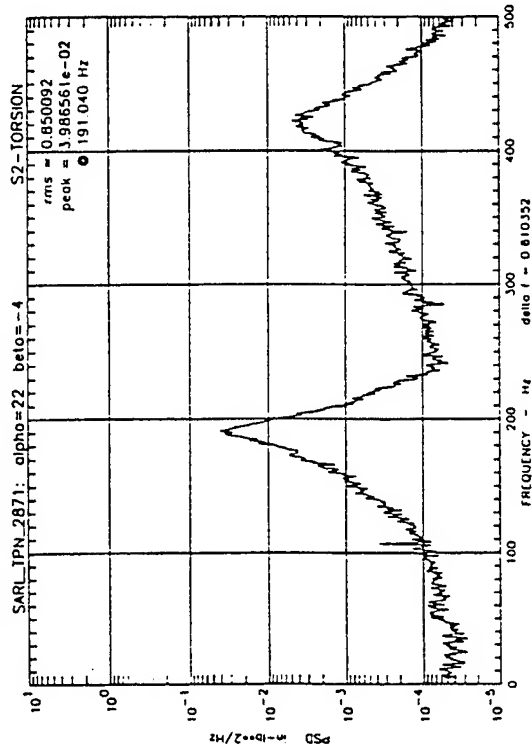
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



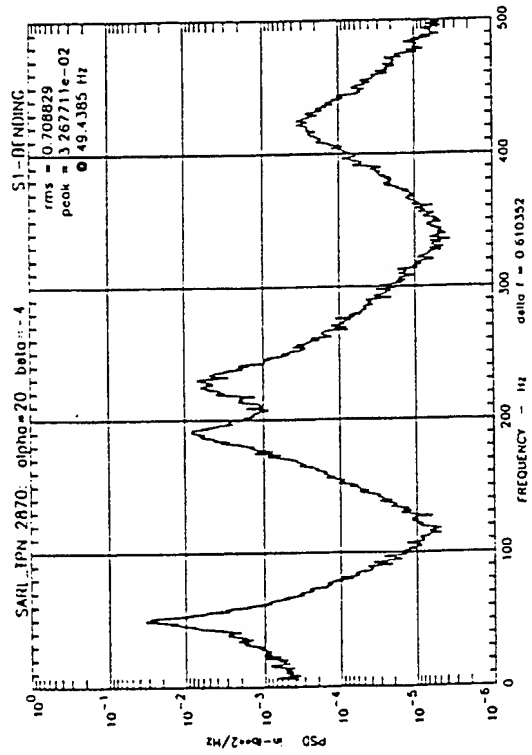
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



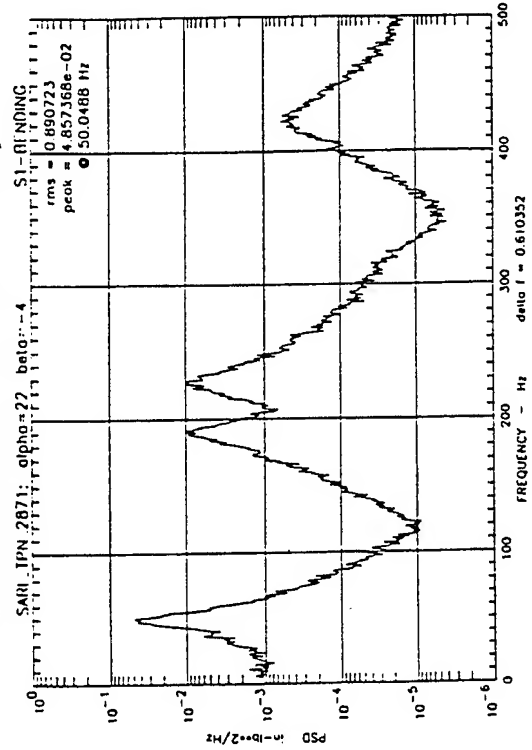
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



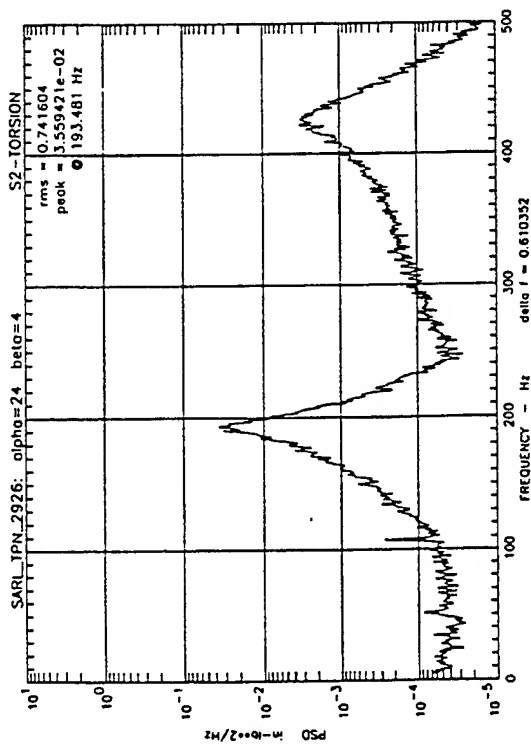
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



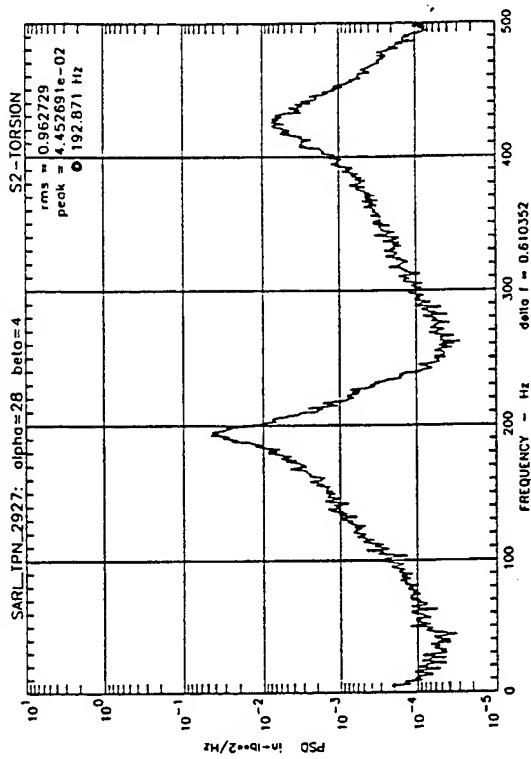
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



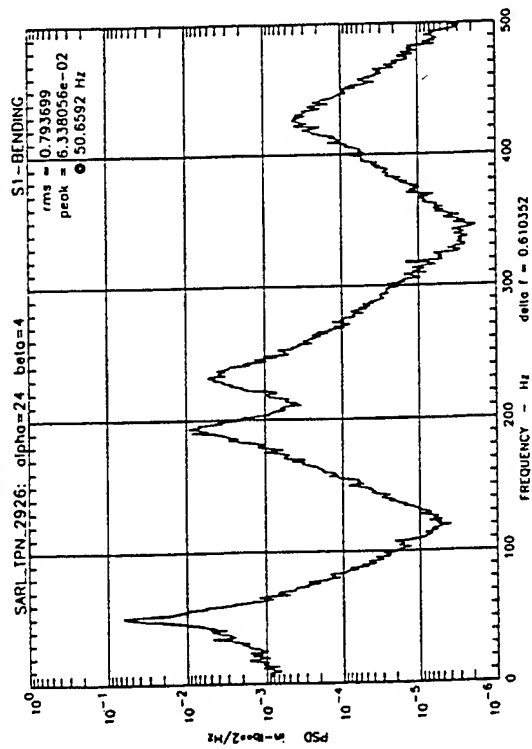
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



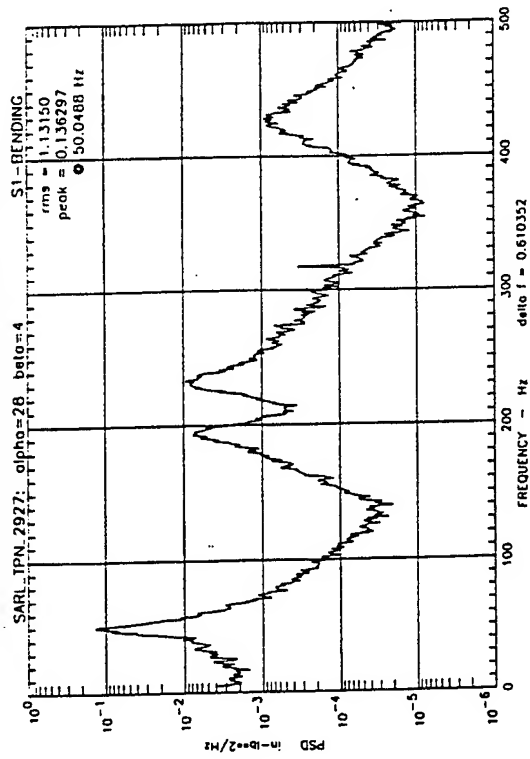
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



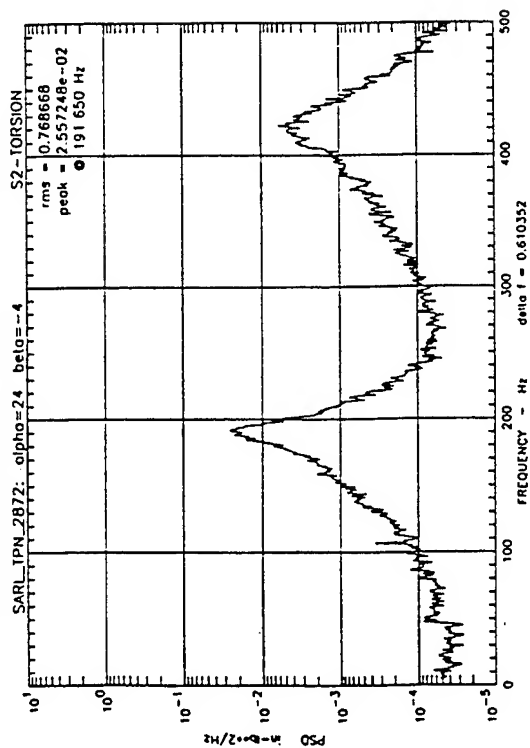
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



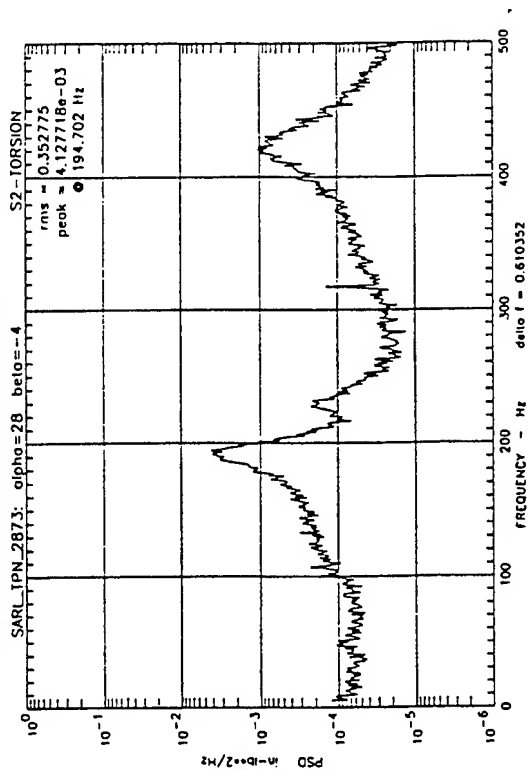
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



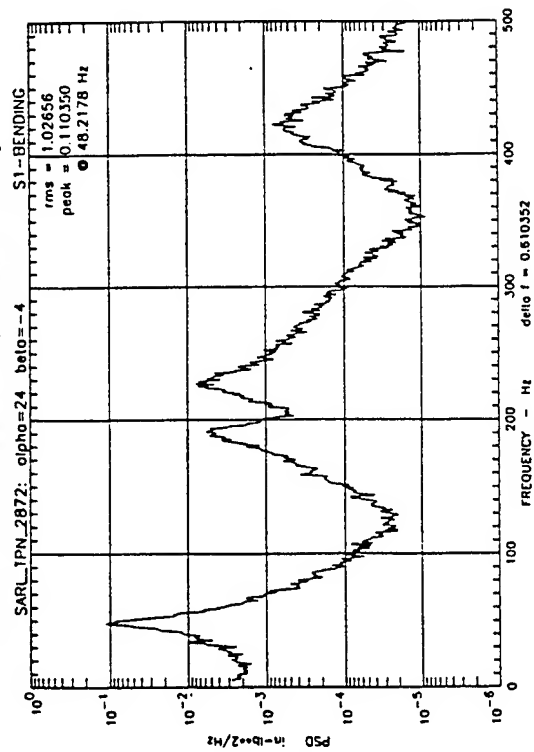
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



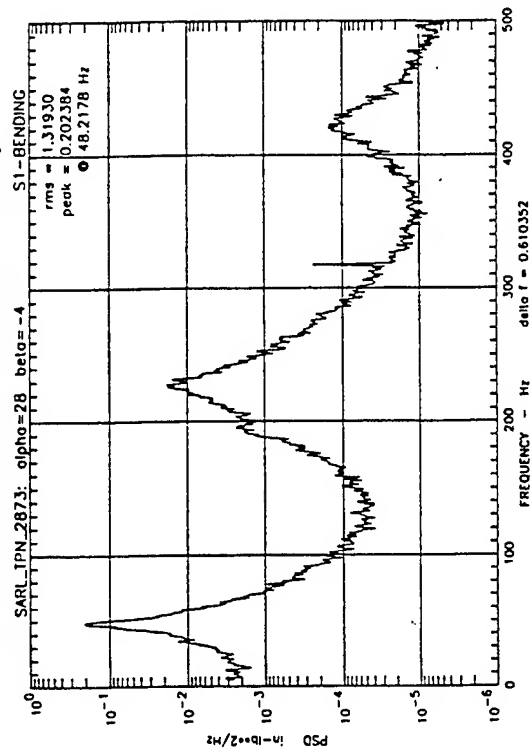
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



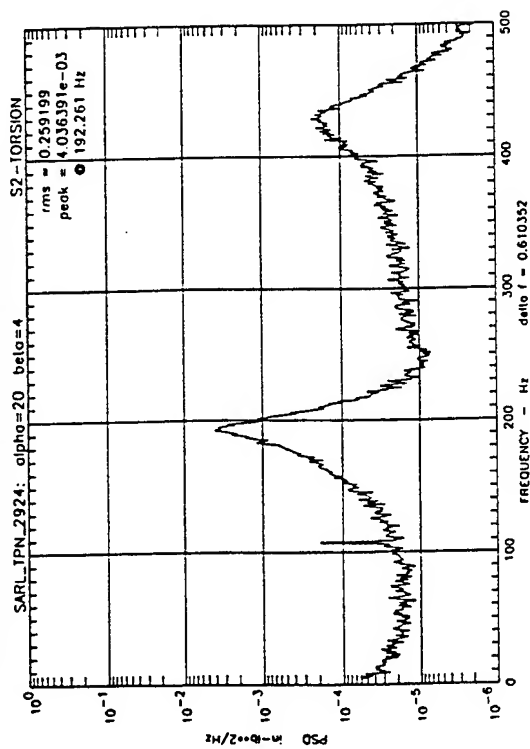
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



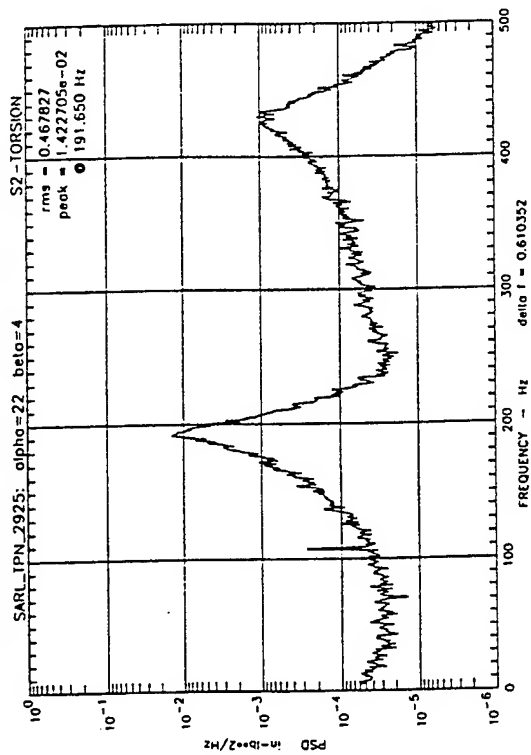
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



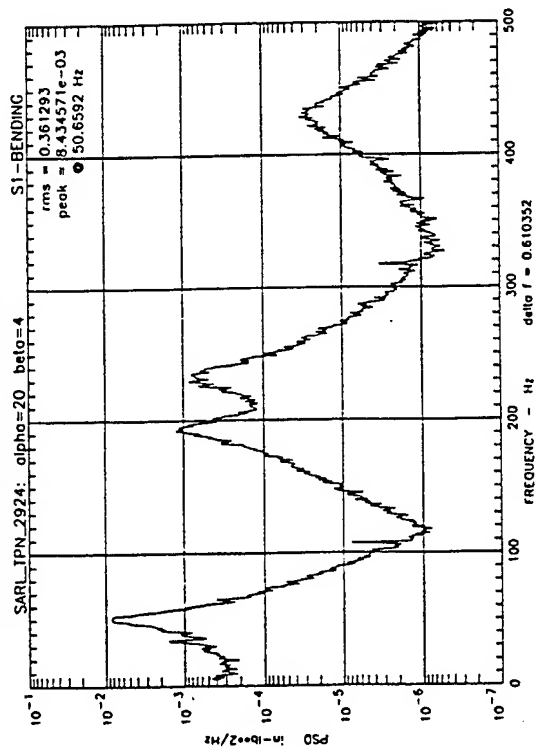
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



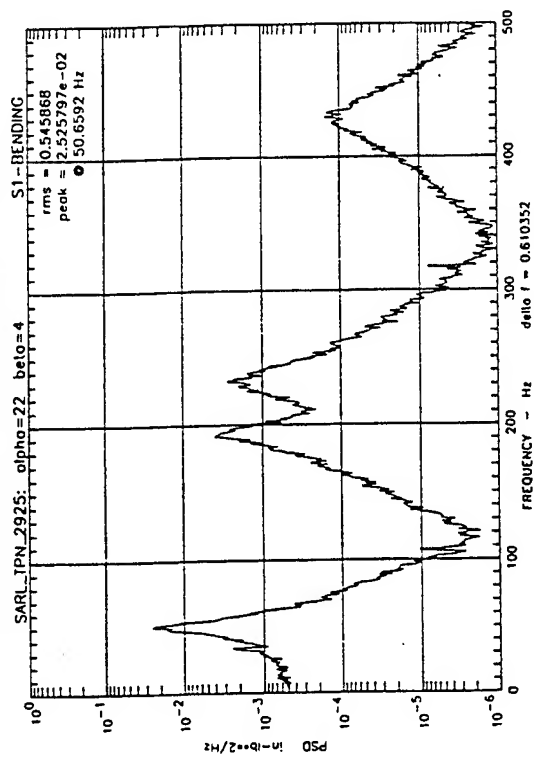
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



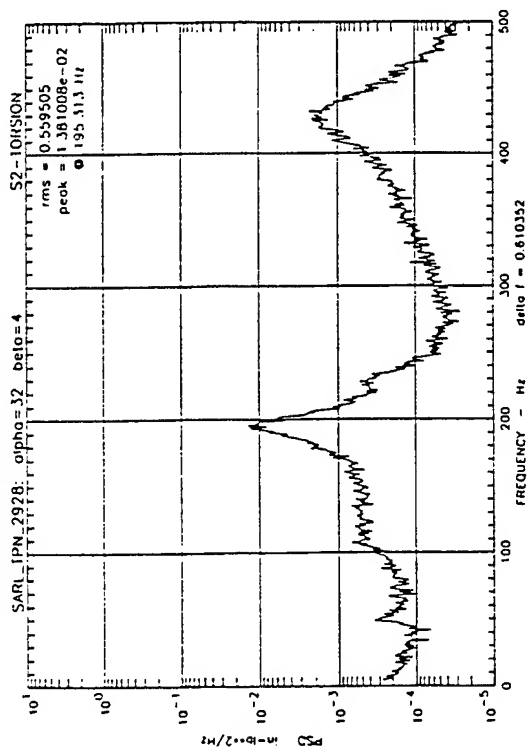
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



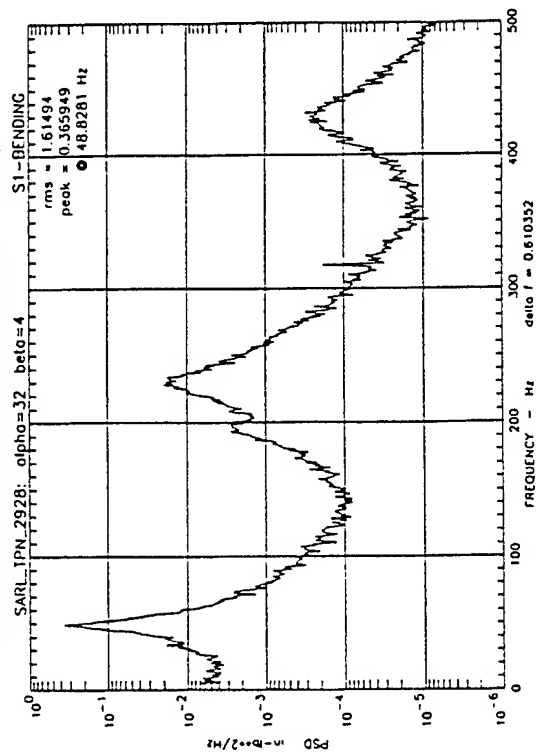
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



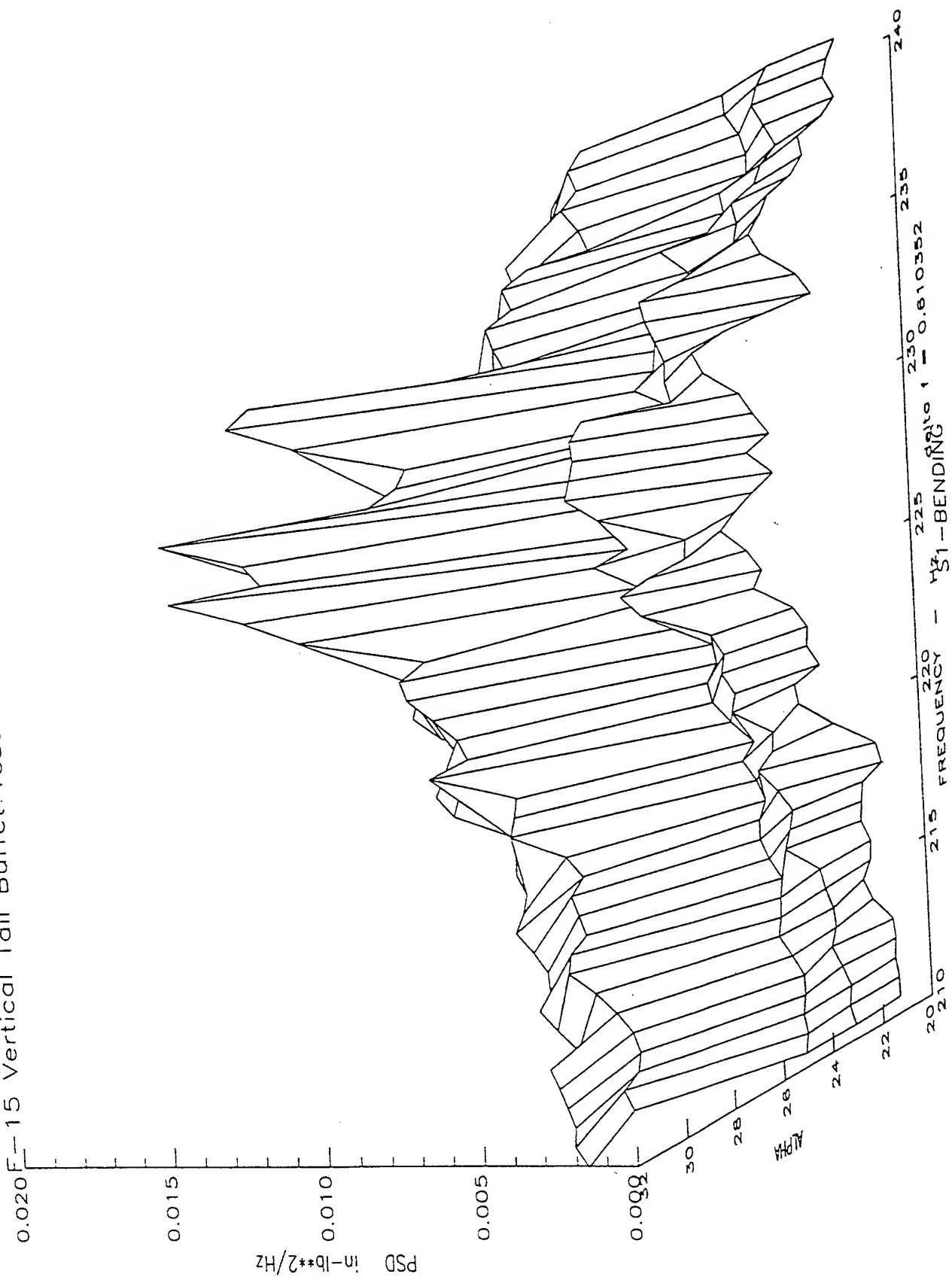
F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing



F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing

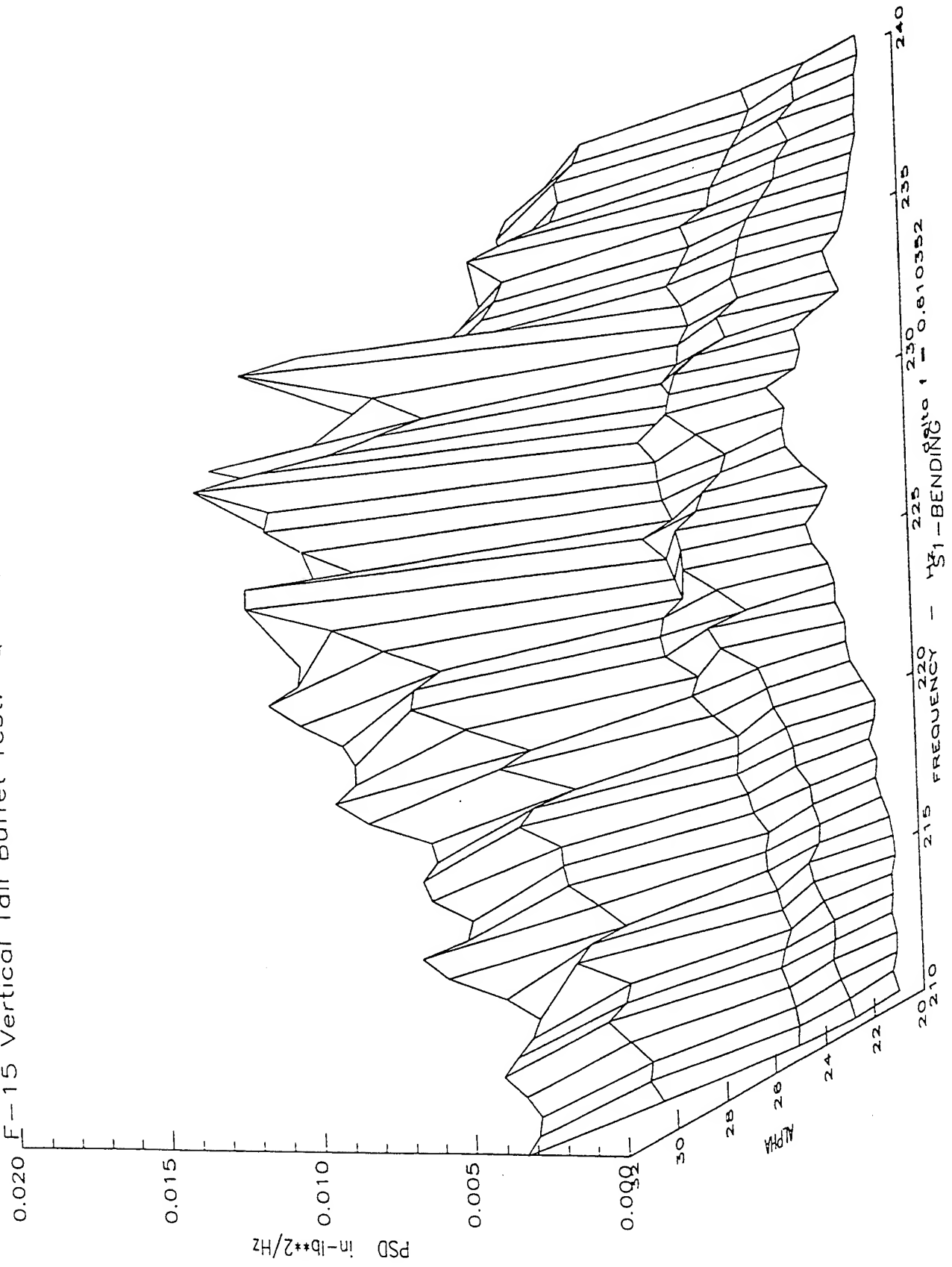


F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=-4$

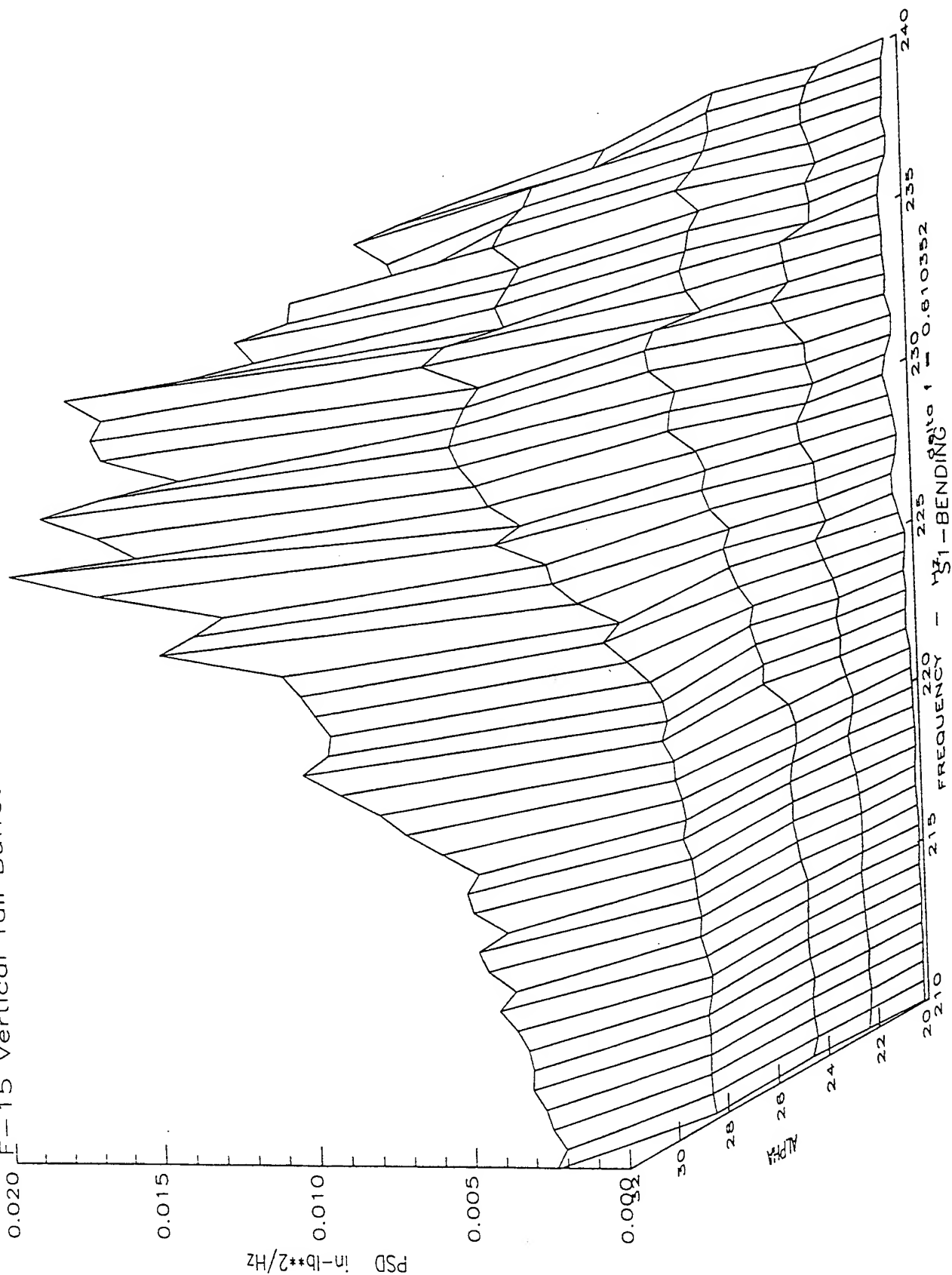




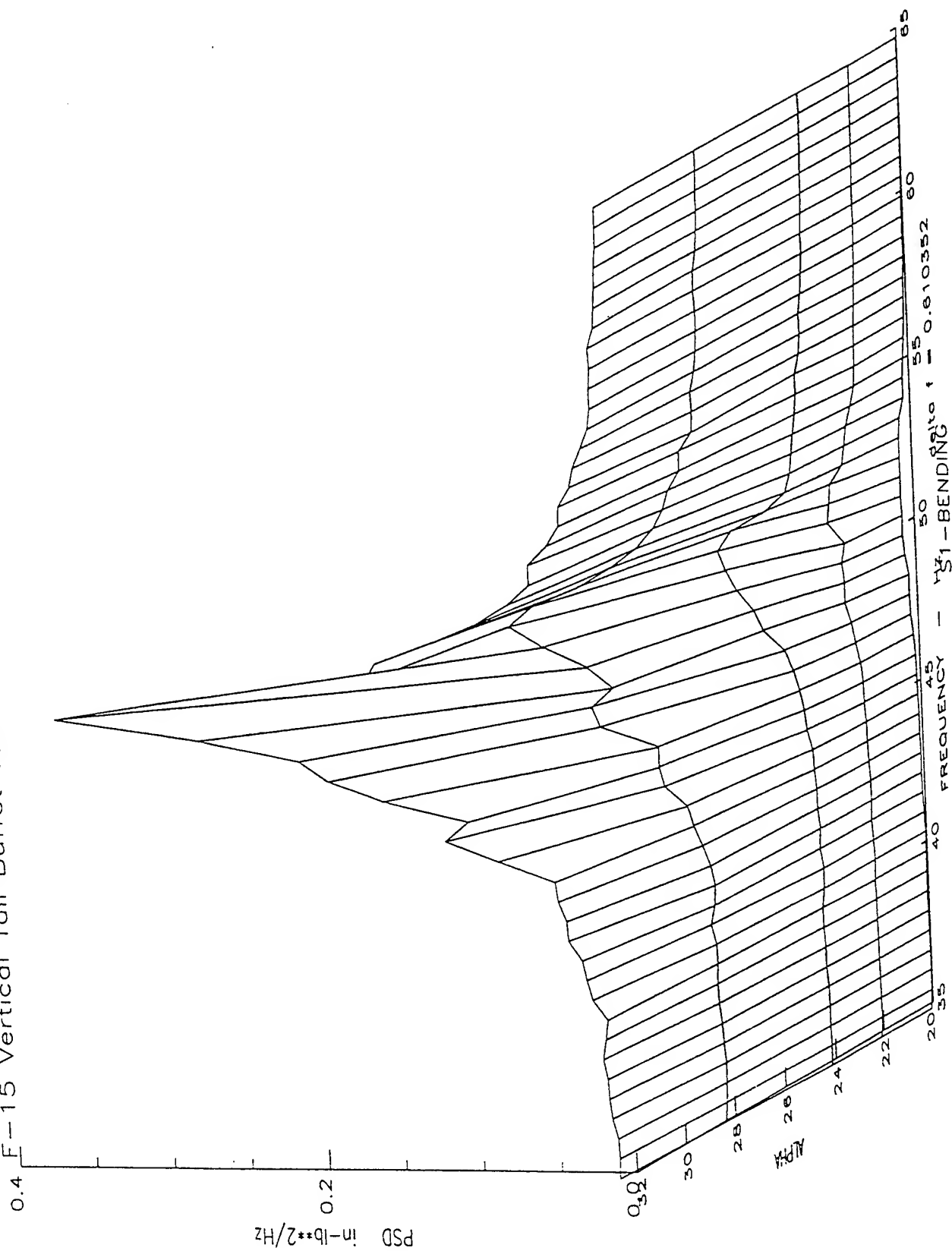
F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=0$



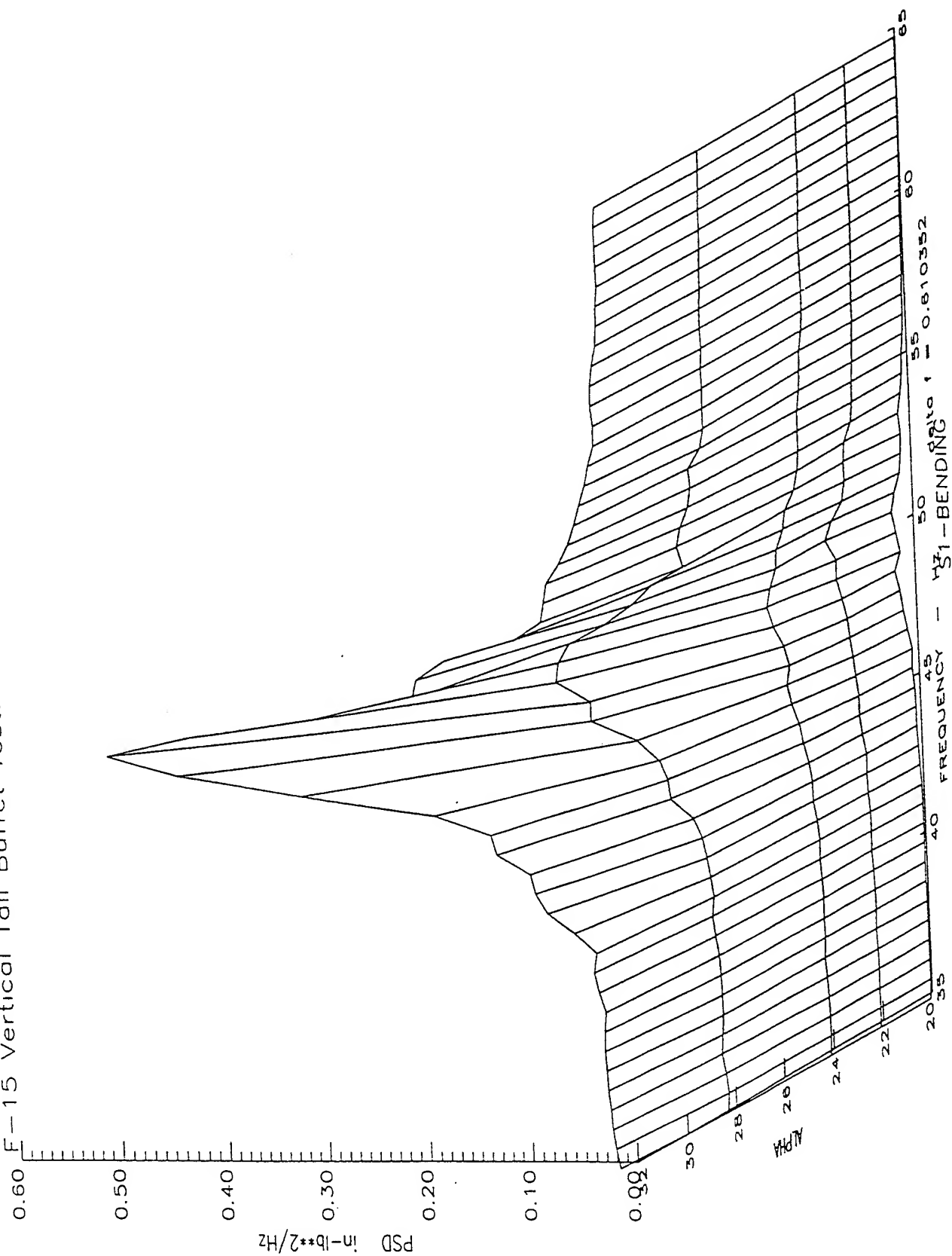
F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\beta=4$



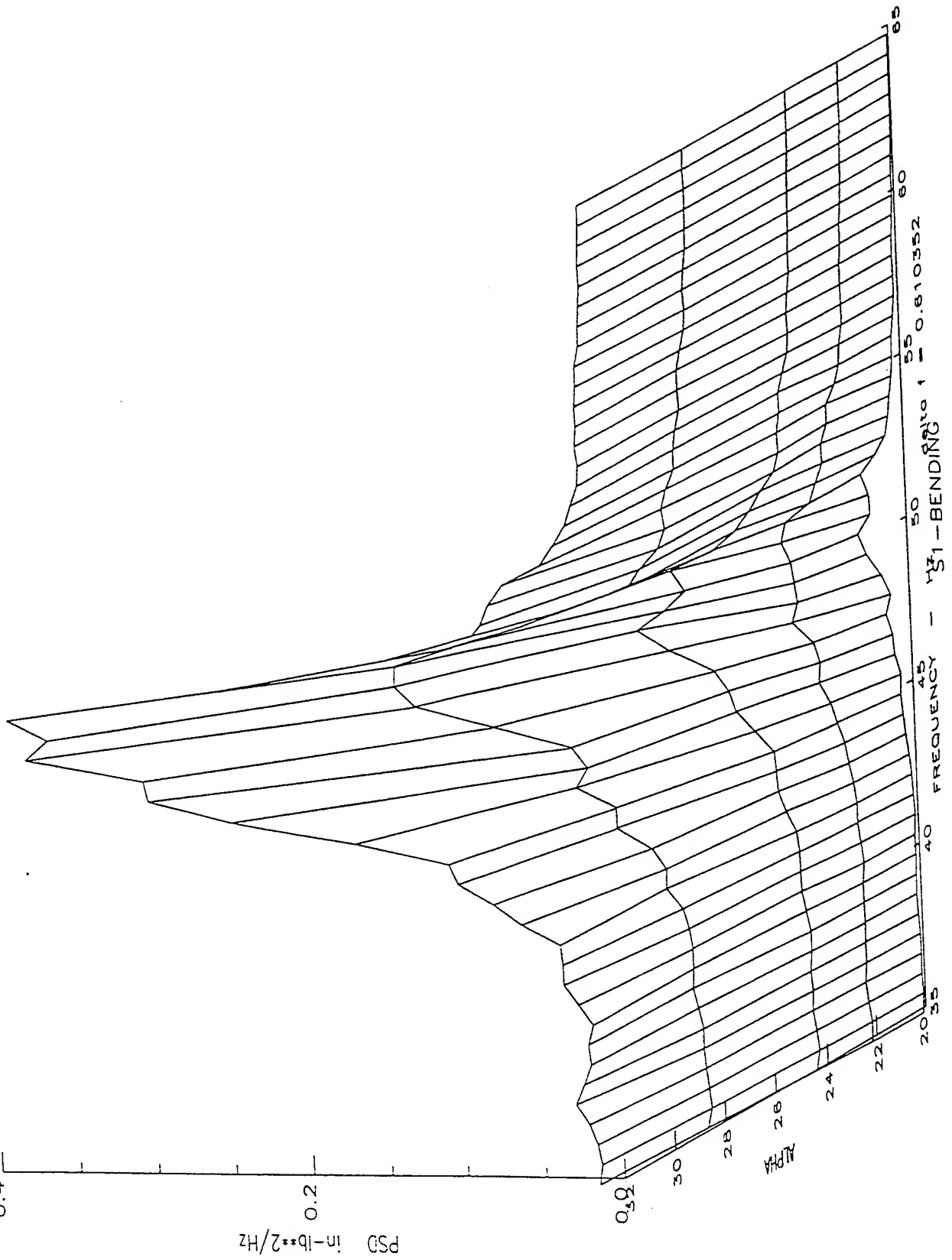
0.4 F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=4$



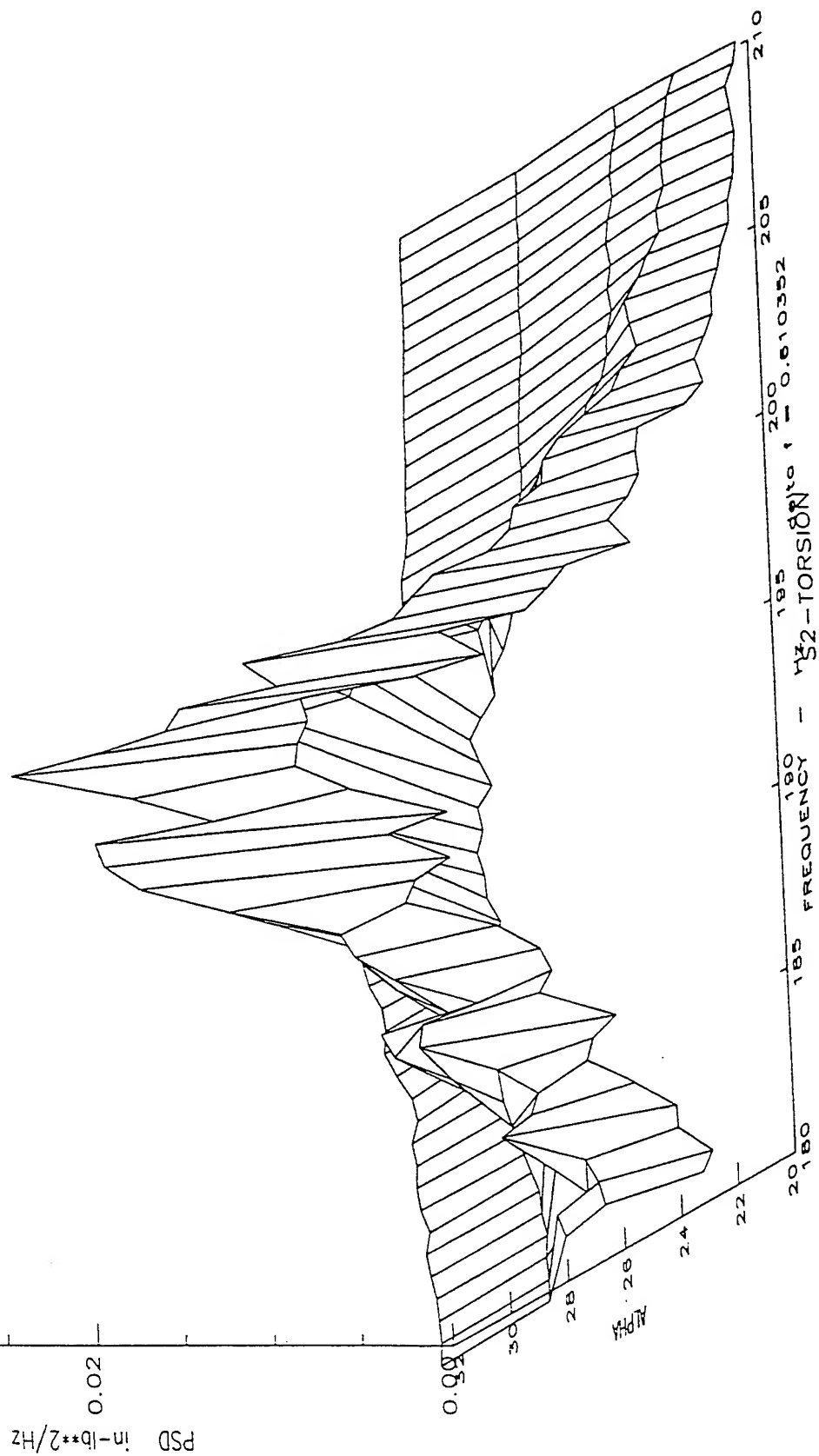
F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=0$



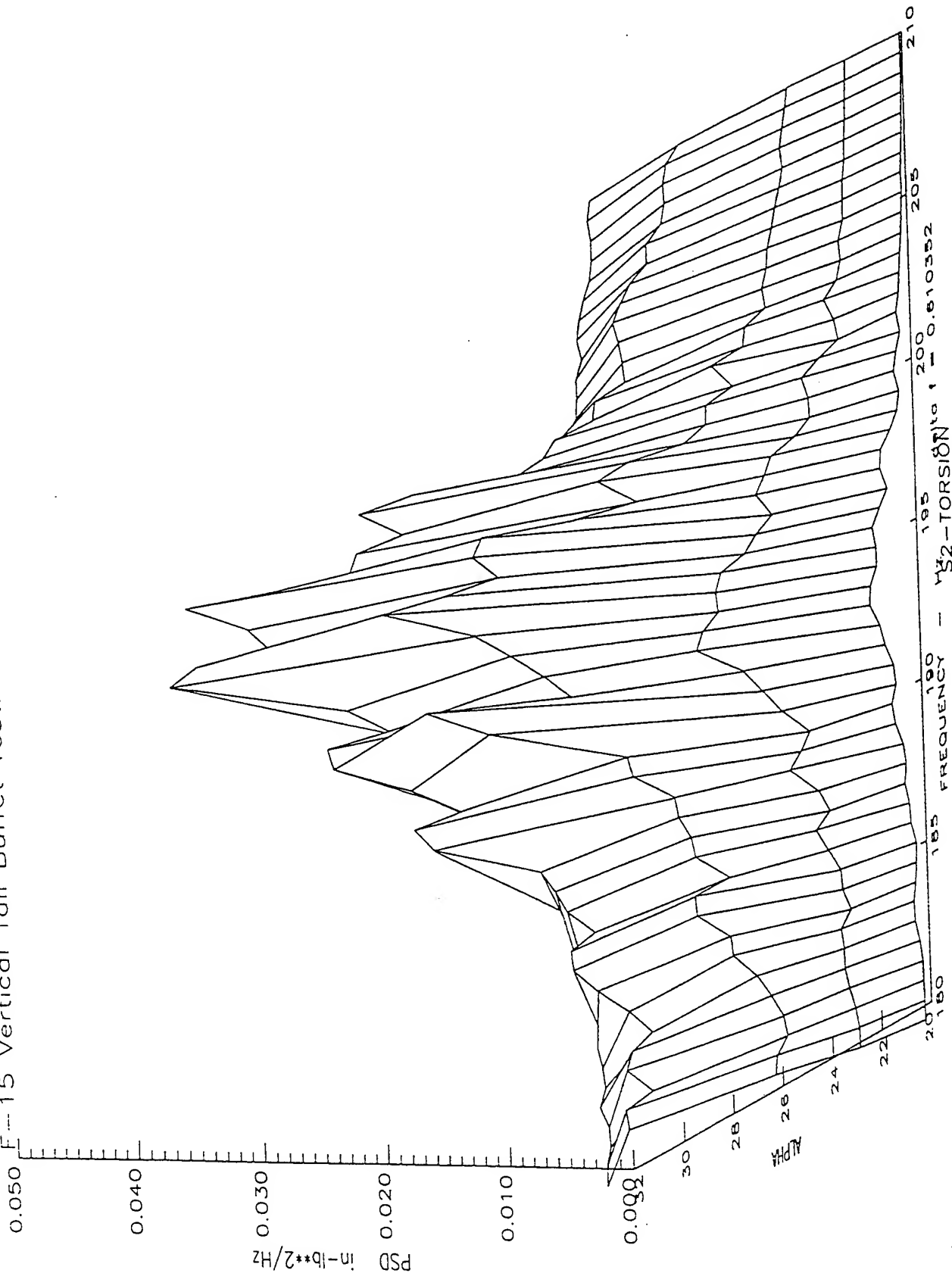
0.4 F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $Beta=-4$



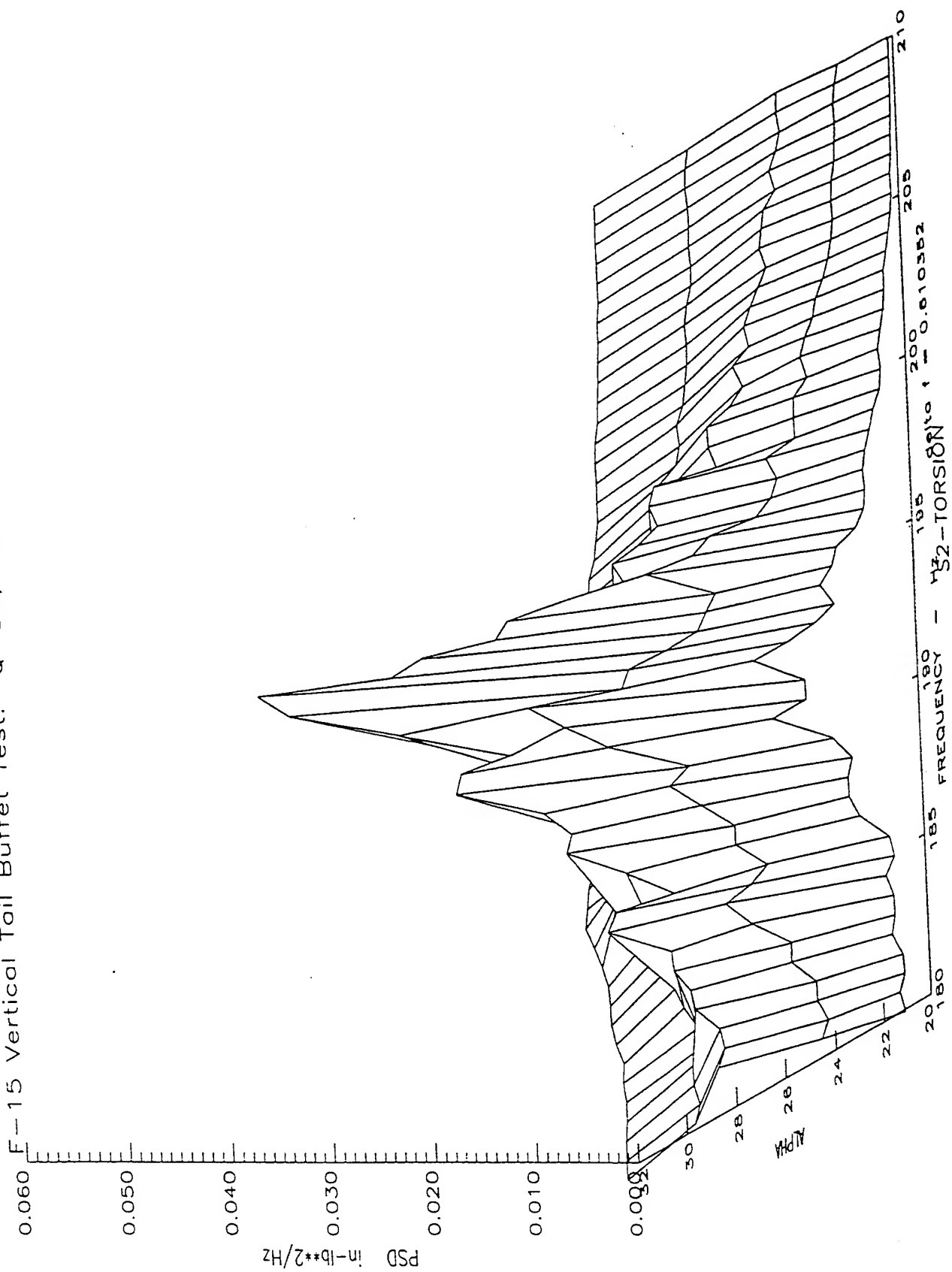
0.04 F-15 Vertical Tail Buffet Test: Q=56, Flexible, No Blowing, Beta=-4



F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $Beta=4$



F-15 Vertical Tail Buffet Test:  $Q=56$ , Flexible, No Blowing,  $\text{Beta}=0$





**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION**

**PSD GRAPHS**

**Q= 56 PSF**

**2.1.1.1 WBP = 45,65 psi, BETA= 0, + 4, - 4, ALPHA= 0.....32 Deg**

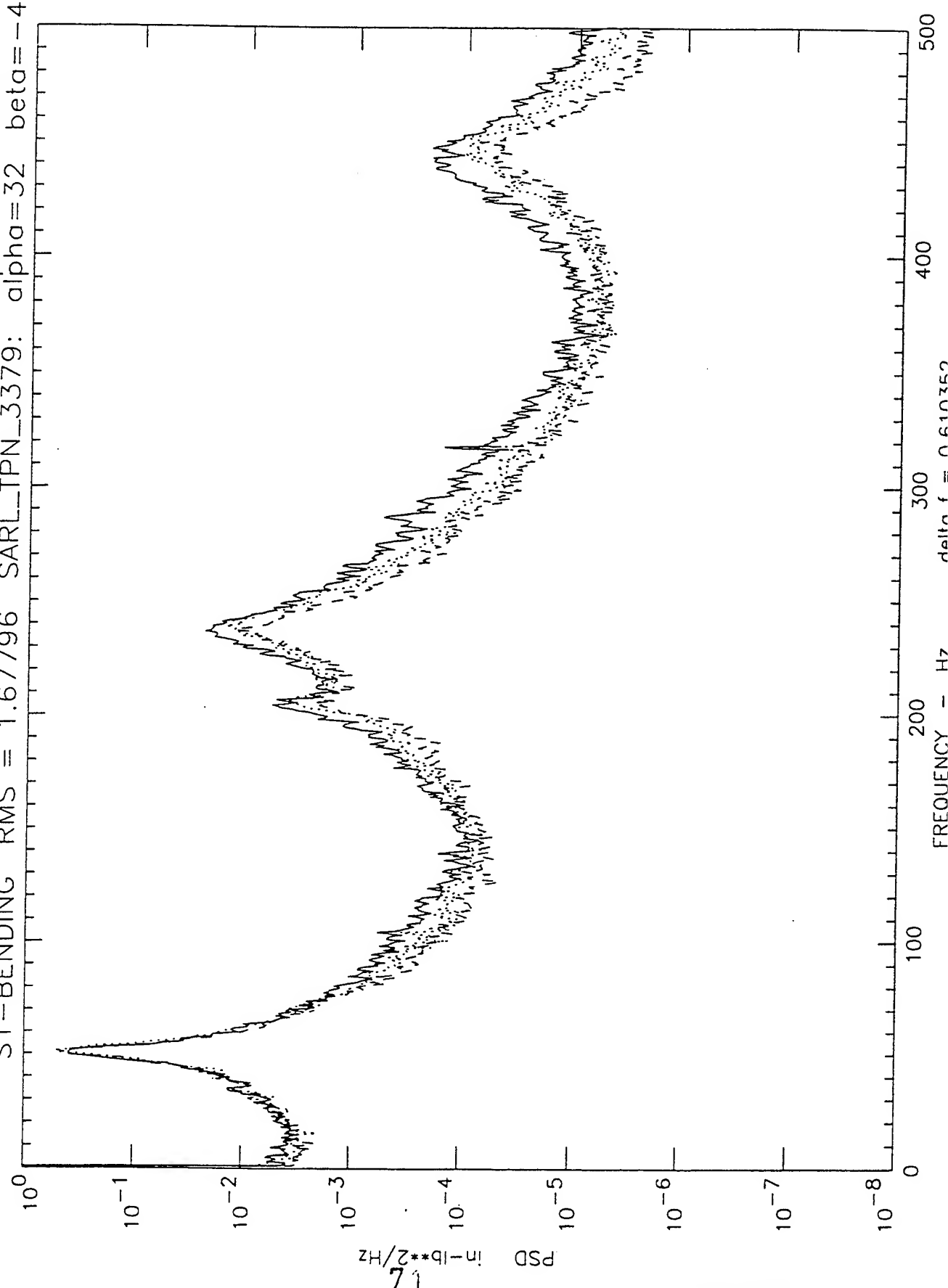
# F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

S1-BENDING RMS = 1.73695  
 S1-BENDING RMS = 1.70740  
 S1-BENDING RMS = 1.67796

SARL\_TPN\_3361: alpha=32  
 SARL\_TPN\_3343: alpha=32  
 SARL\_TPN\_3379: alpha=32

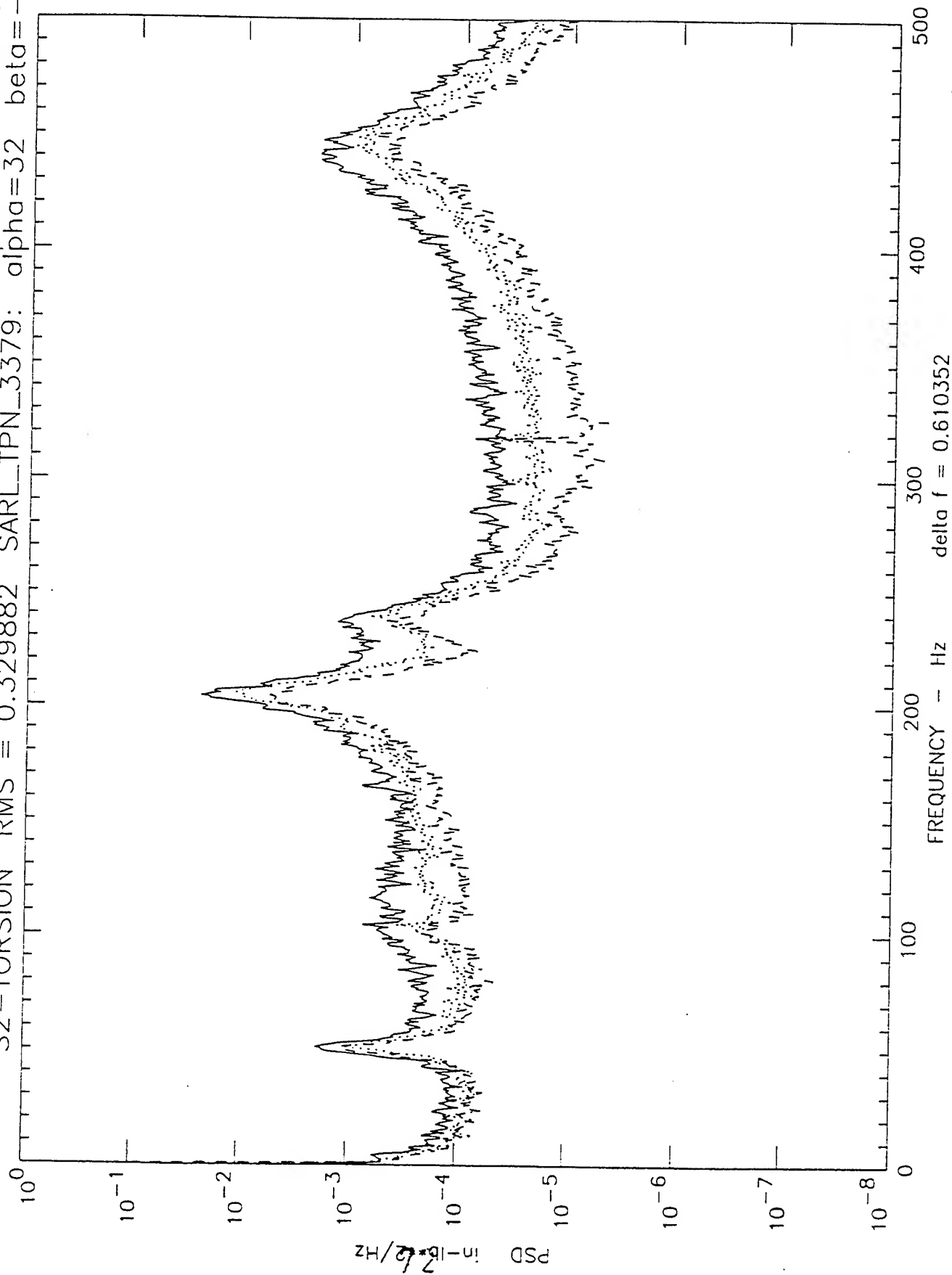
beta=4  
 beta=0  
 beta=-4

wbp=45  
 wbp=45  
 wbp=45



# F-15 Vertical Tail Buffet Test: Q=56, Flexible Tc

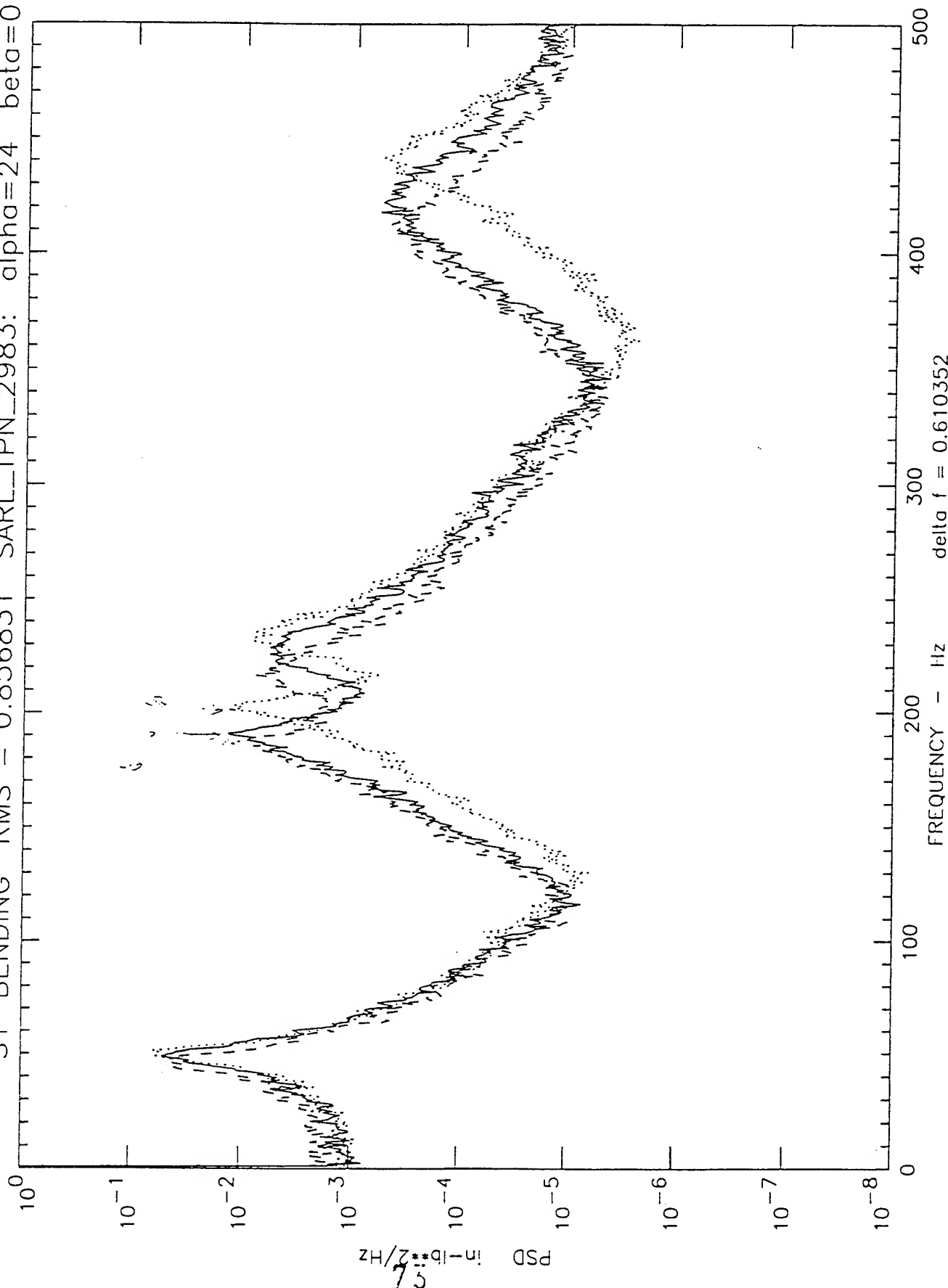
—	S2-TORSION	RMS = 0.586426	SARL_TPN_3361:	alpha=32	beta=4	wbp=45
.....	S2-TORSION	RMS = 0.425601	SARL_TPN_3343:	alpha=32	beta=0	wbp=45
----	S2-TORSION	RMS = 0.329882	SARL_TPN_3379:	alpha=32	beta=-4	wbp=45



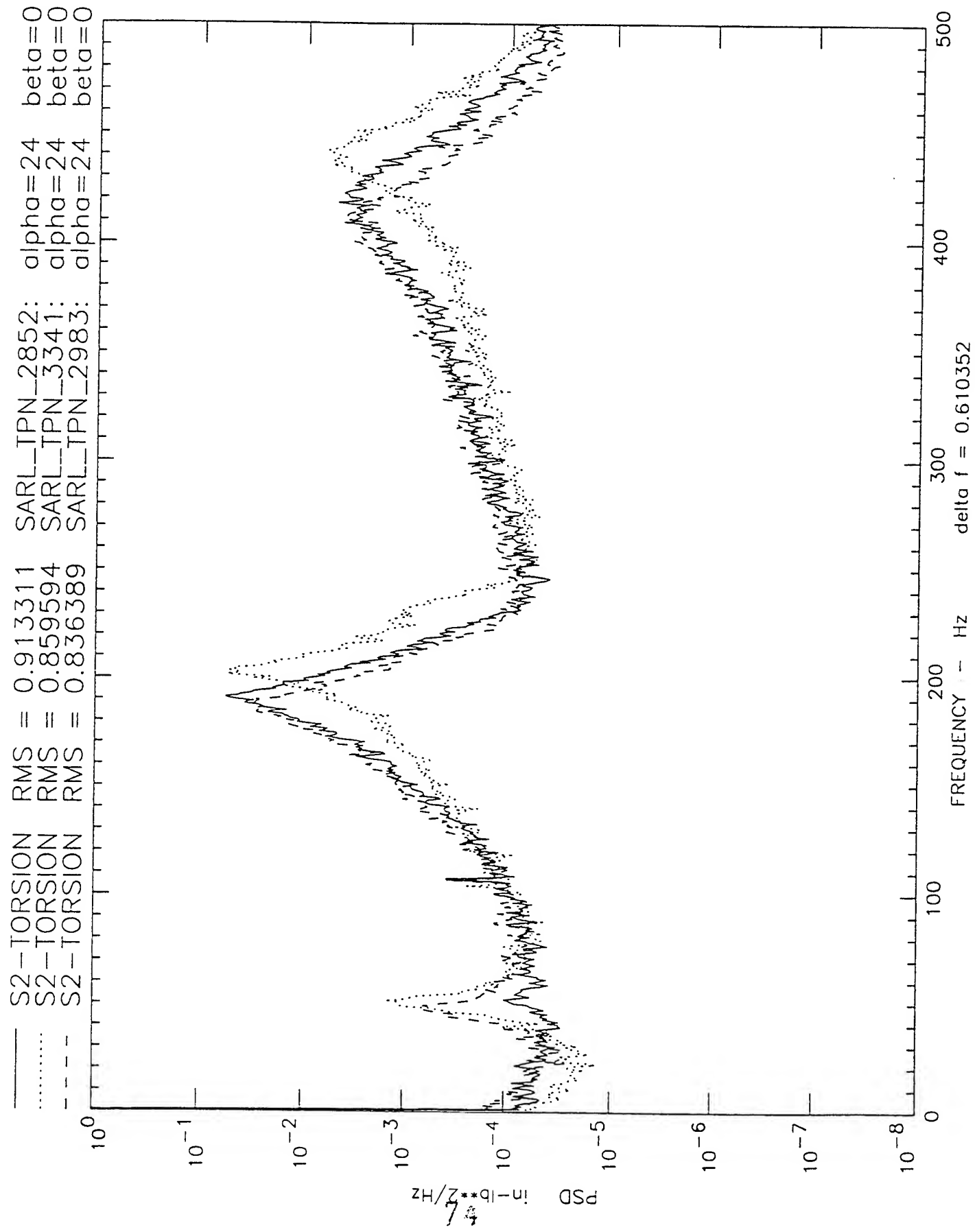
# F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

—	S1-BENDING	RMS = 0.857335	SARL_TPN_2852:	alpha=24	beta=0
.....	S1-BENDING	RMS = 0.871690	SARL_TPN_3341:	alpha=24	beta=0
- - - -	S1-BENDING	RMS = 0.856831	SARL_TPN_2983:	alpha=24	beta=0

bp=0  
wbp=45  
wbp=65



F-15 Vertical Tail Buffet Test: Q=56, Flexible iail

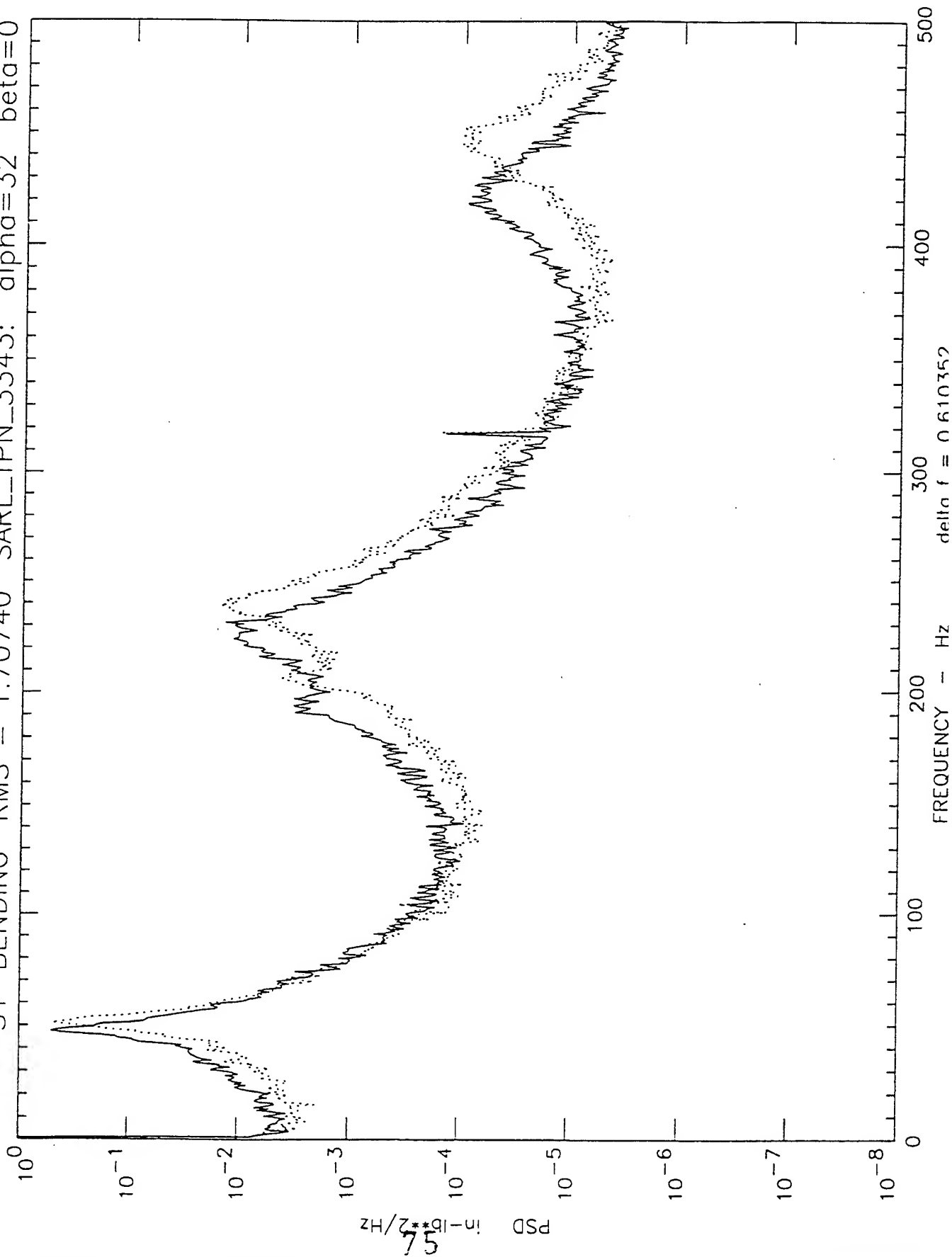


bp=0  
wbp=45  
wbp=65

# F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

S1-BENDING RMS = 1.78916 SARL\_IPN\_2854: alpha=32 beta=0  
 S1-BENDING RMS = 1.70740 SARL\_IPN\_3343: alpha=32 beta=0

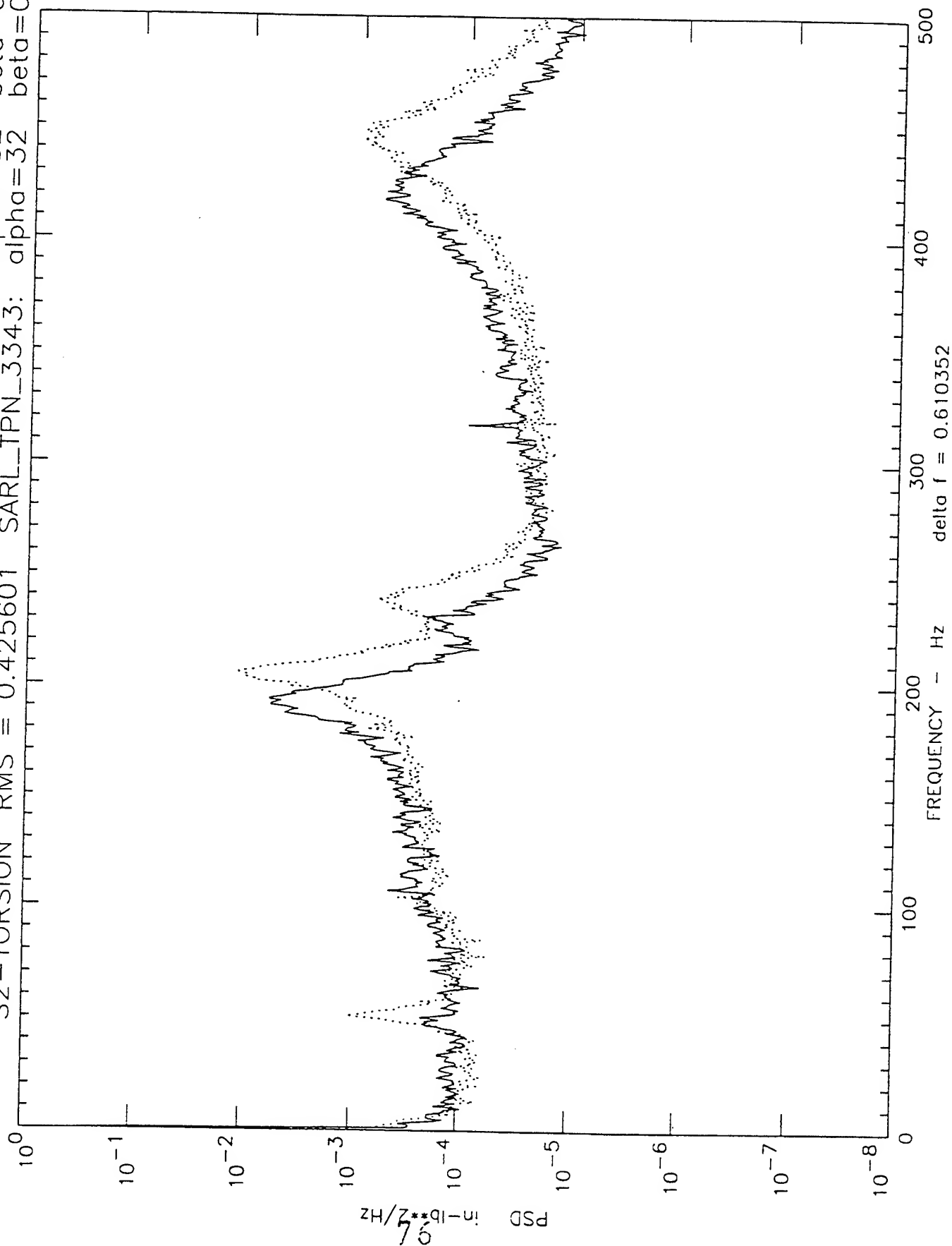
bp=0  
 wbp=45



# F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

S2-TORSION RMS = 0.375895 SARL\_TPN\_2854: alpha=32 beta=0  
 S2-TORSION RMS = 0.425601 SARL\_TPN\_3343: alpha=32 beta=0

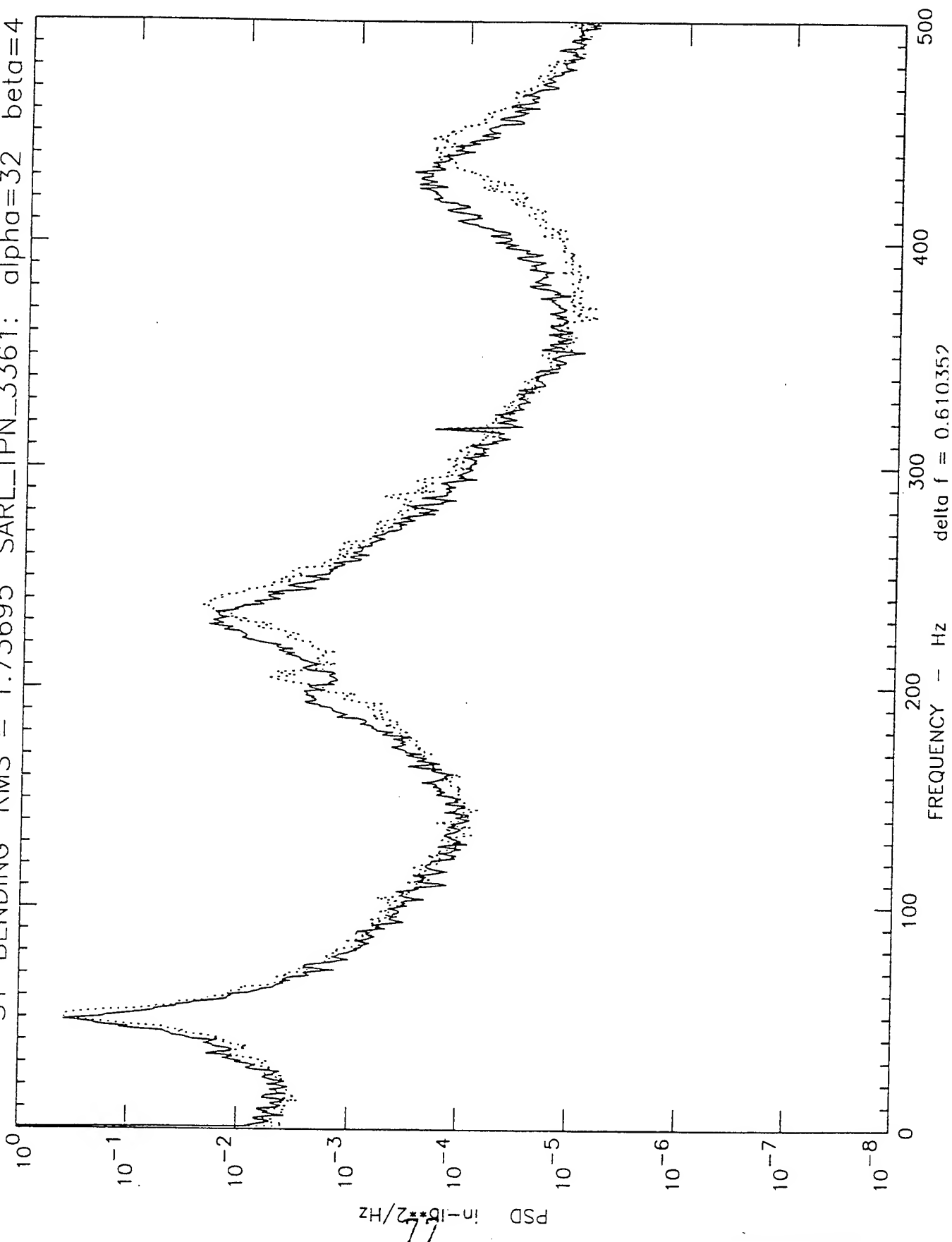
bp=0  
 wbp=45



F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

— S1-BENDING RMS = 1.61494 SARL\_TPN\_2928: alpha=32 beta=4  
..... S1-BENDING RMS = 1.73695 SARL\_TPN\_3361: alpha=32 beta=4

bp=0  
wbp=45

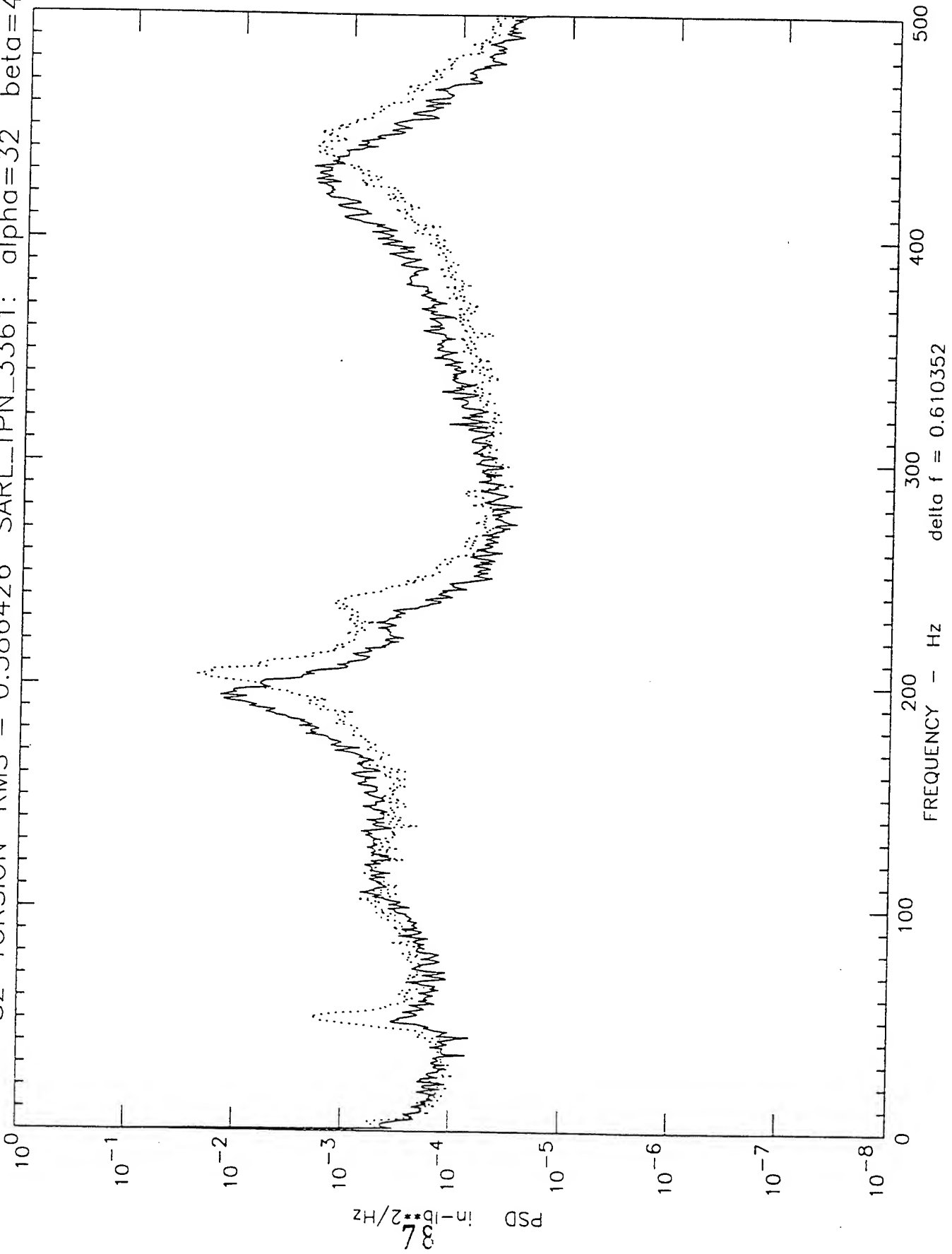




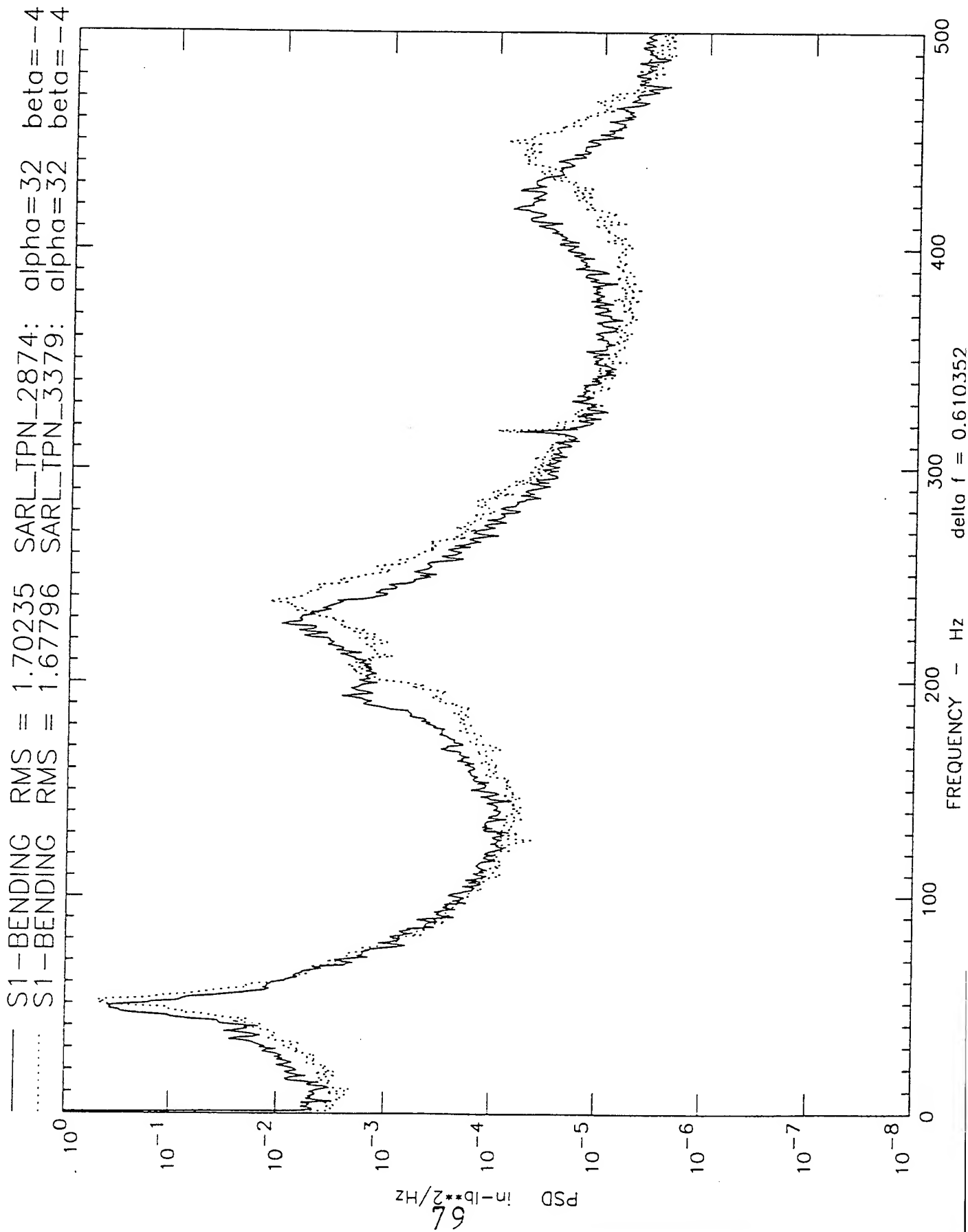
F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

— S2-TORSION RMS = 0.559505 SARL\_TPN\_2928: alpha=32 beta=4  
..... S2-TORSION RMS = 0.586426 SARL\_TPN\_3361: alpha=32 beta=4

bp=0  
wbp=45

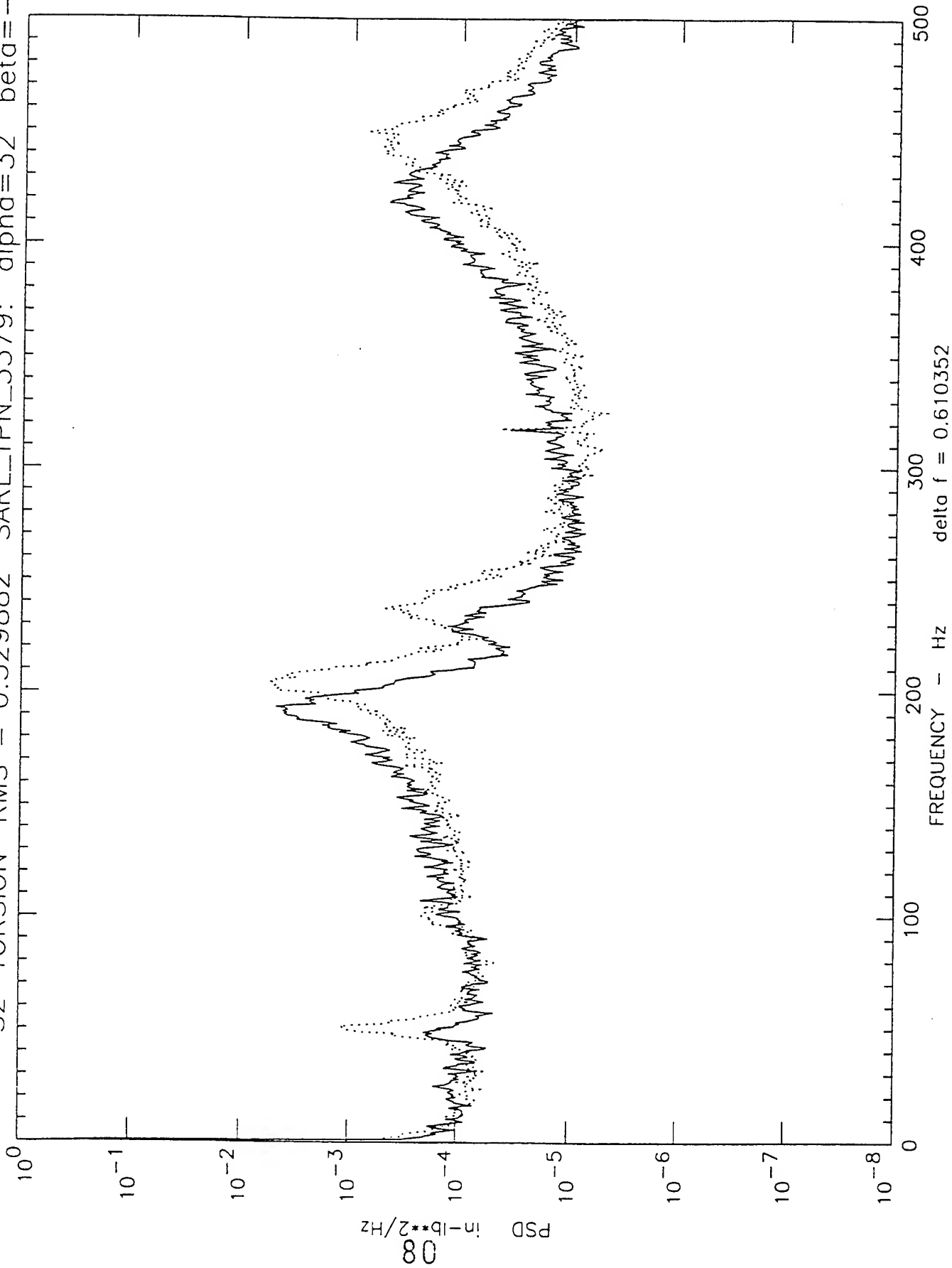


# F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

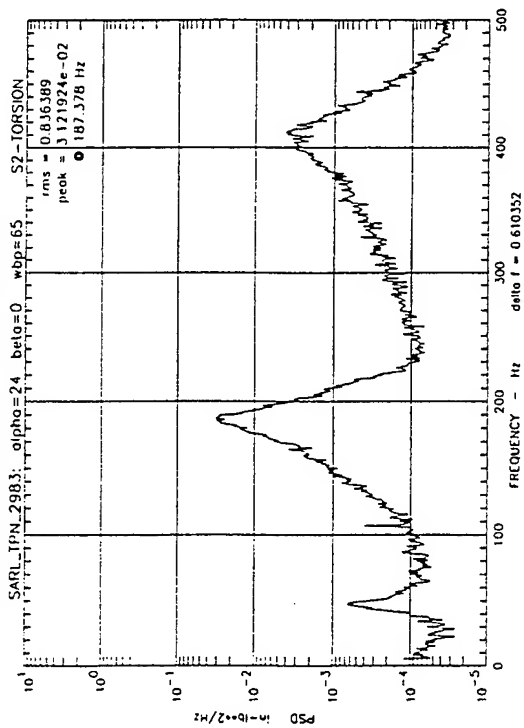


F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

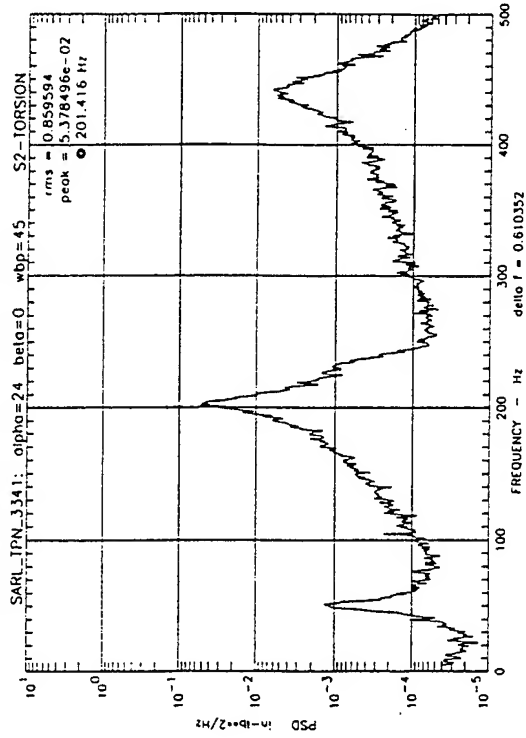
— S2-TORSION RMS = 0.311466 SARL\_TPN\_2874: alpha=32 beta=-4 bp=0  
..... S2-TORSION RMS = 0.329882 SARL\_TPN\_3379: alpha=32 beta=-4 wbp=4:



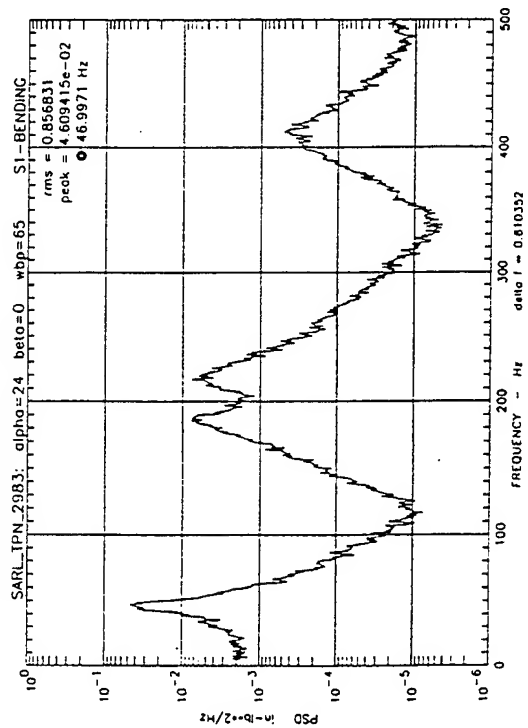
F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail



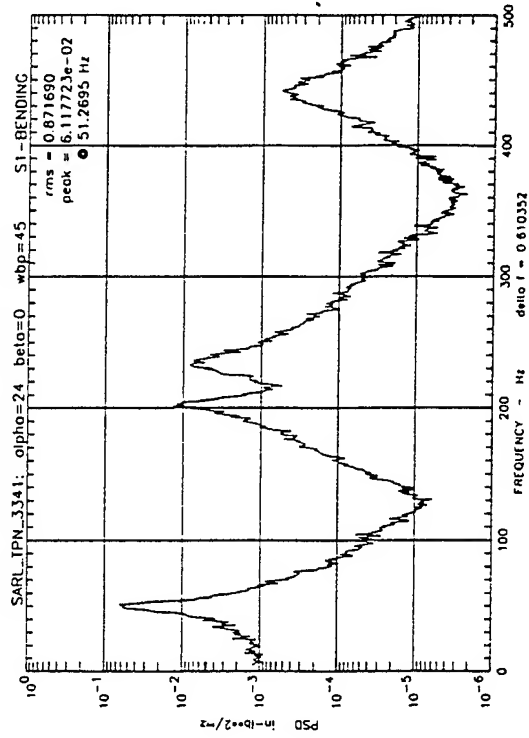
F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail



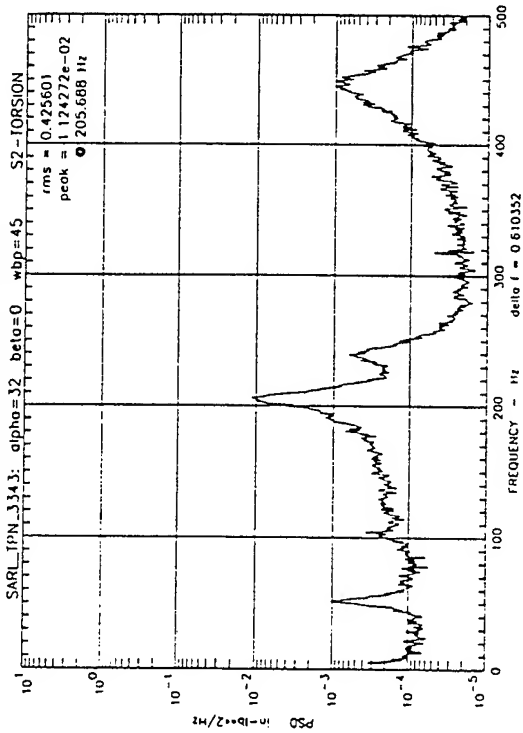
F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail



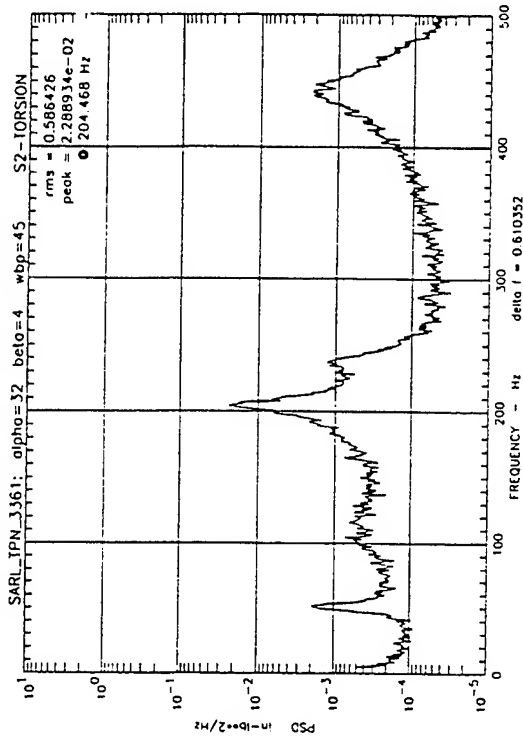
F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail



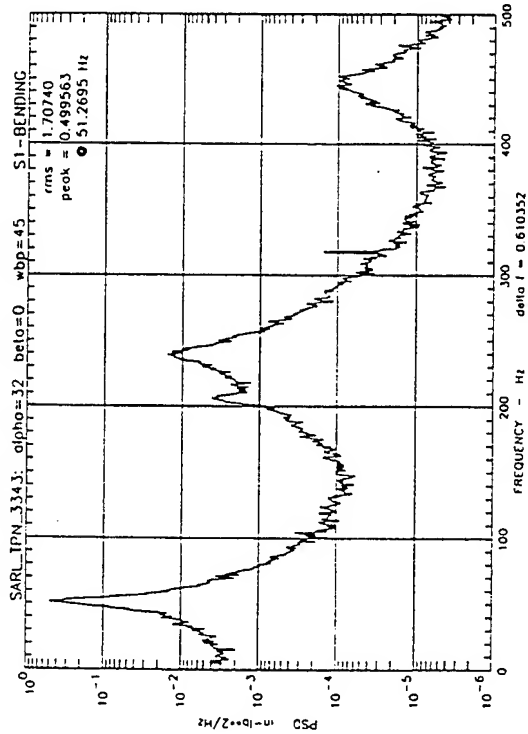
F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail



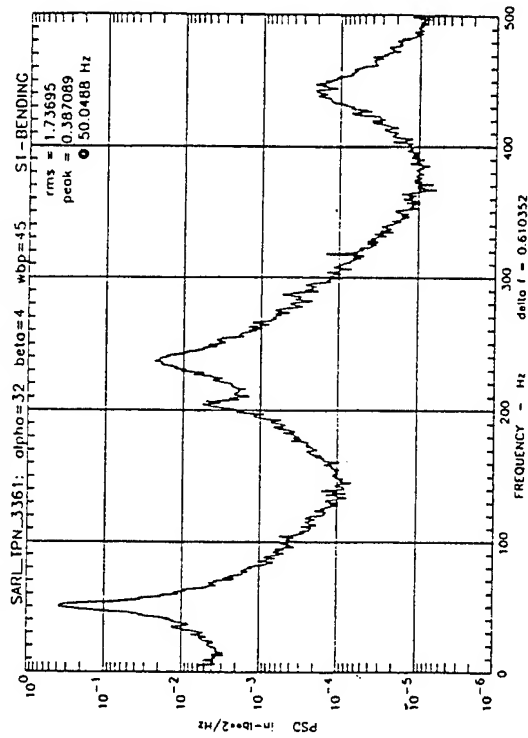
F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

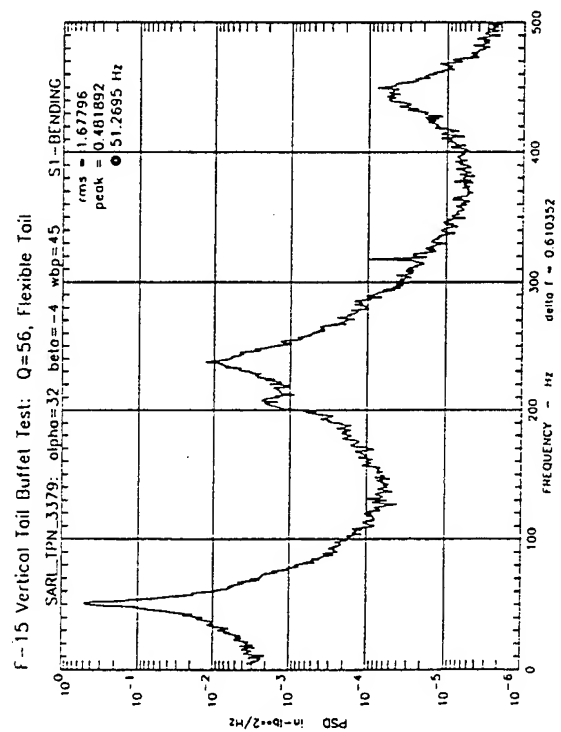
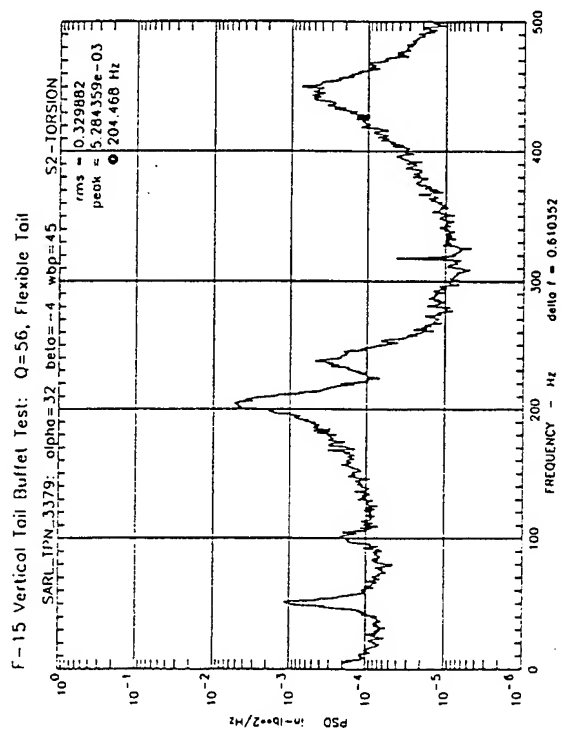


F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail

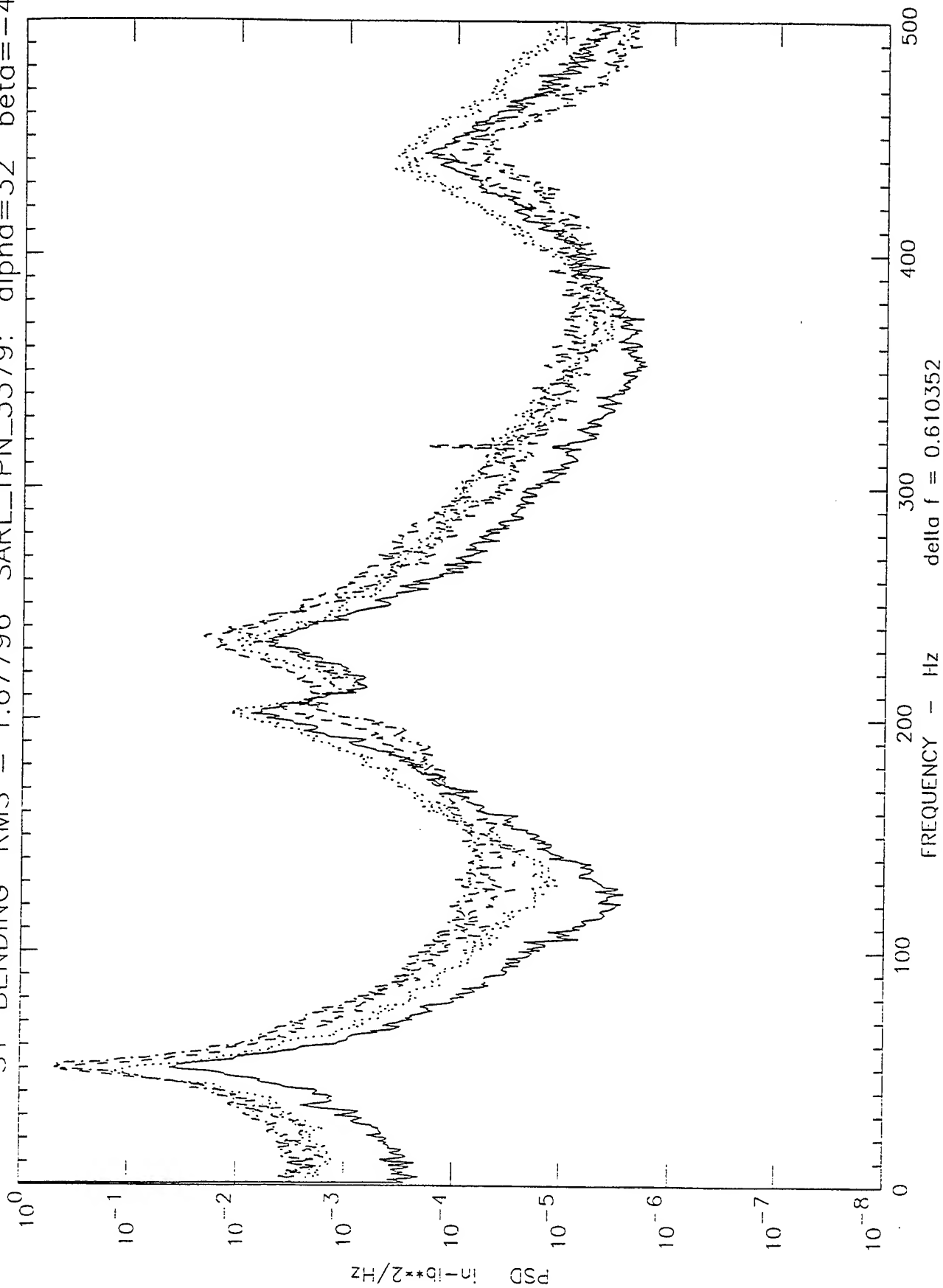


F-15 Vertical Tail Buffet Test: Q=56, Flexible Tail



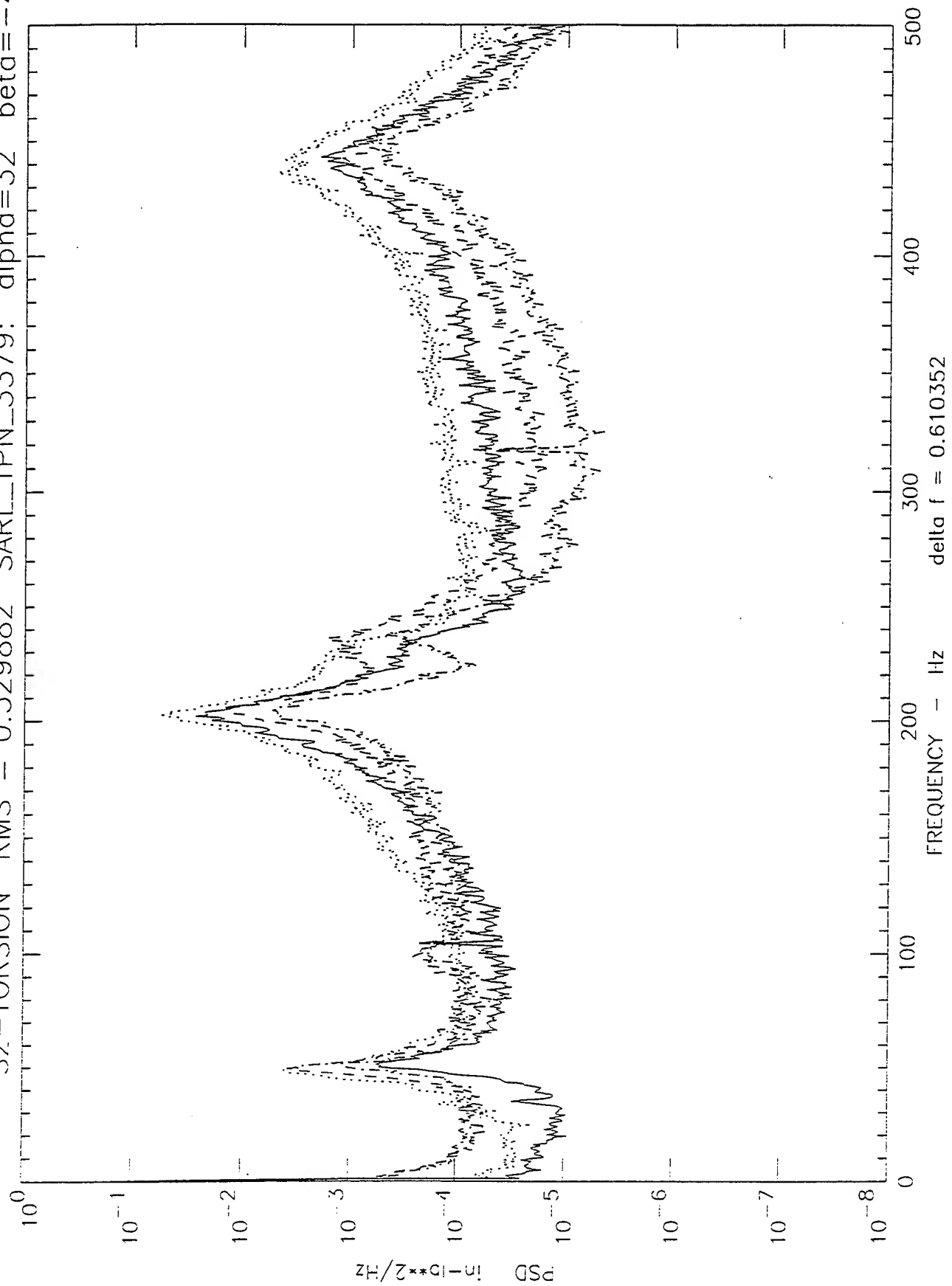


—	S1-BENDING	RMS = 0.655035	SARL_TPN_3375:	alpha=20	beta=-4	wbp=4
...	S1-BENDING	RMS = 1.13096	SARL_TPN_3377:	alpha=24	beta=-4	wbp=45
- - -	S1-BENDING	RMS = 1.59007	SARL_TPN_3378:	alpha=28	beta=-4	wbp=45
- - -	S1-BENDING	RMS = 1.67796	SARL_TPN_3379:	alpha=32	beta=-4	wbp=45



# 1 - 15 V tical Tail Buffet Test: Q=56

S2-TORSION RMS = 0.566799 SARI\_TPN\_3375: alpha=20 beta=-4 wbp=4  
 S2-TORSION RMS = 0.858179 SARI\_TPN\_3377: alpha=24 beta=-4 wbp=4  
 S2-TORSION RMS = 0.493807 SARI\_TPN\_3378: alpha=28 beta=-4 wbp=4  
 S2-TORSION RMS = 0.329882 SARI\_TPN\_3379: alpha=32 beta=-4 wbp=4





---	S1-BENDING	RMS = 0.549562	SARL_TPN_3339:	alpha=20	beta=0	wbp=45
---	S1-BENDING	RMS = 0.871690	SARL_TPN_3341:	alpha=24	beta=0	wbp=45
---	S1-BENDING	RMS = 1.15022	SARL_TPN_3342:	alpha=28	beta=0	wbp=45
---	S1-BENDING	RMS = 1.70740	SARL_TPN_3343:	alpha=32	beta=0	wbp=45

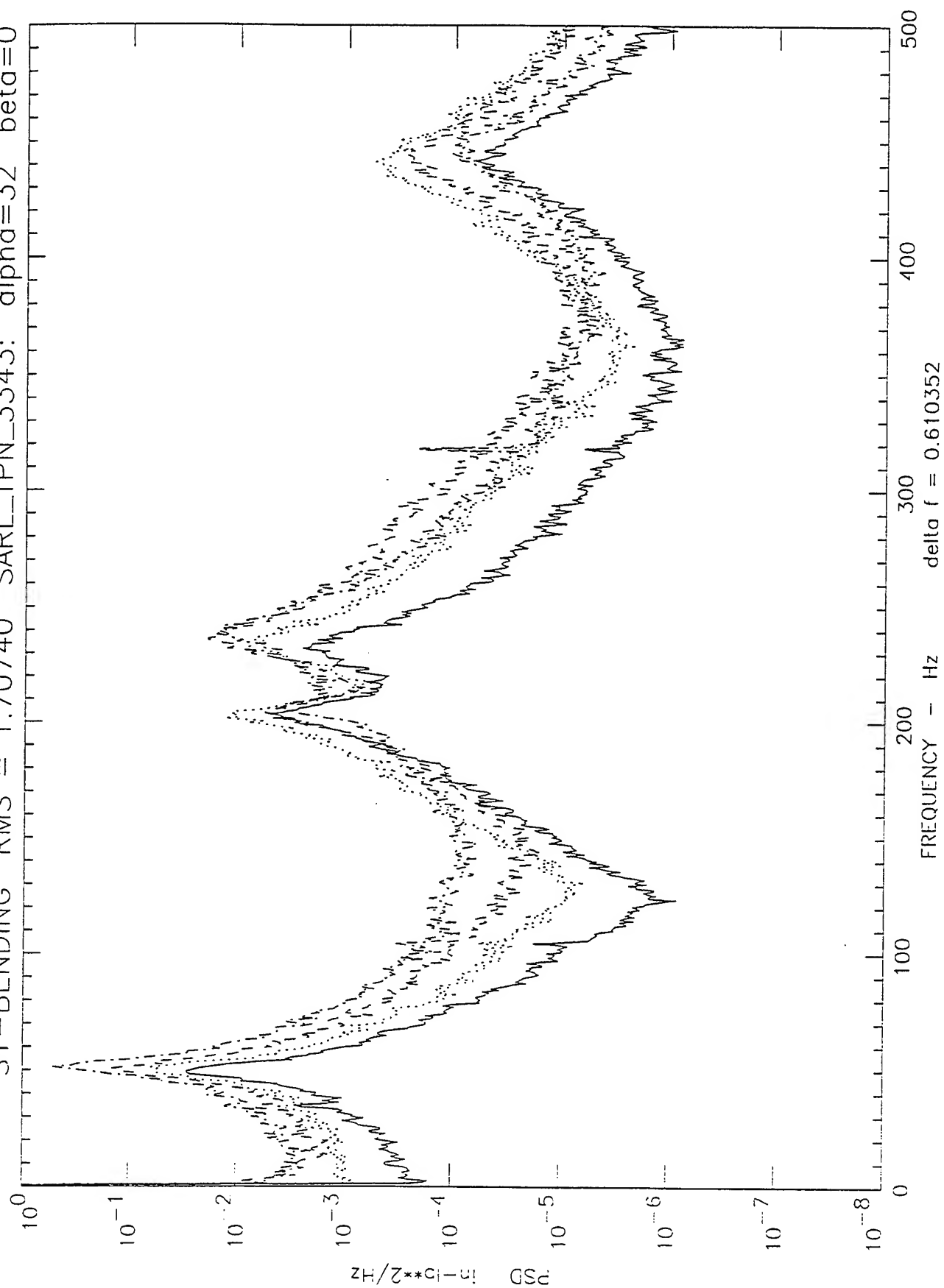
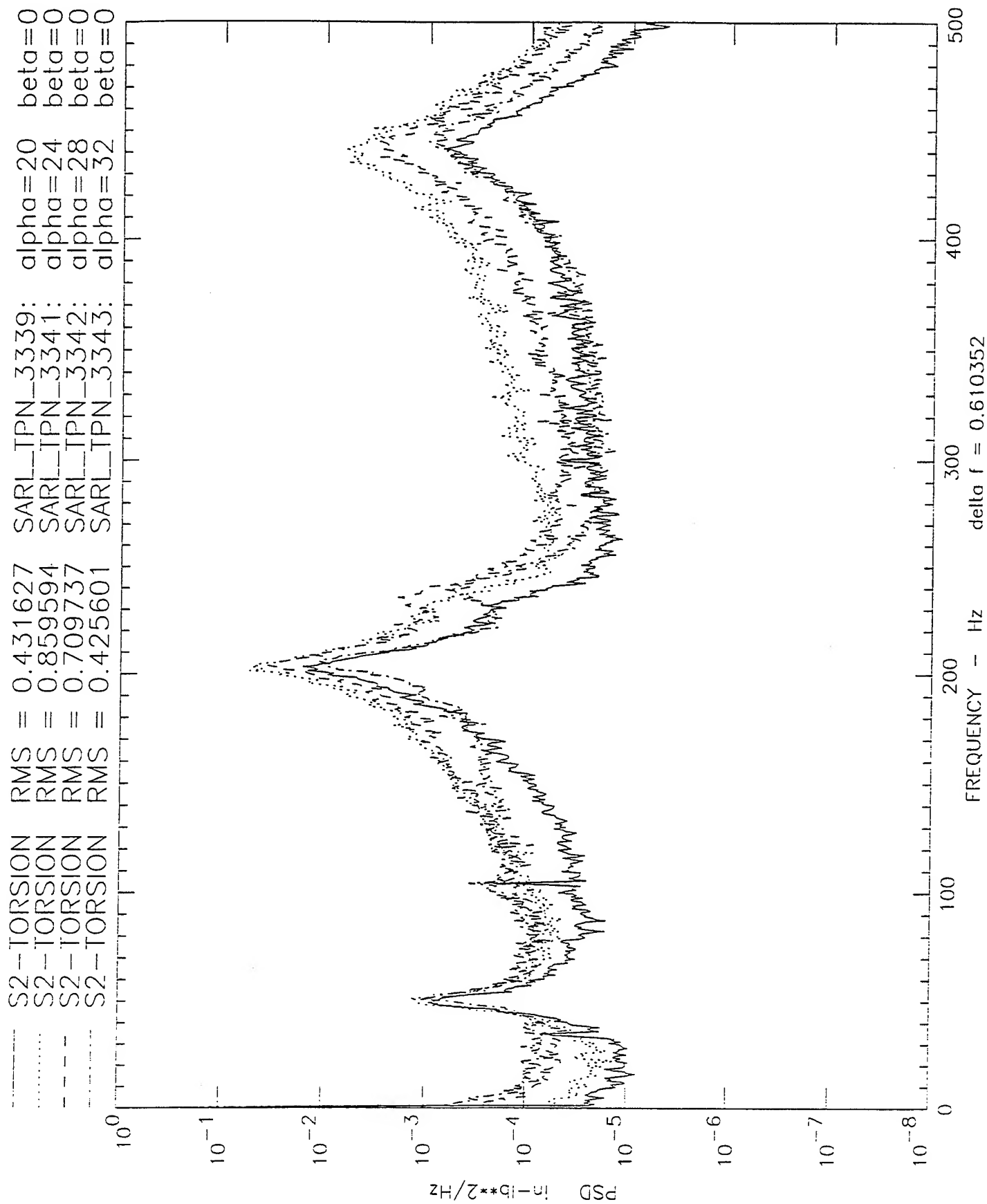
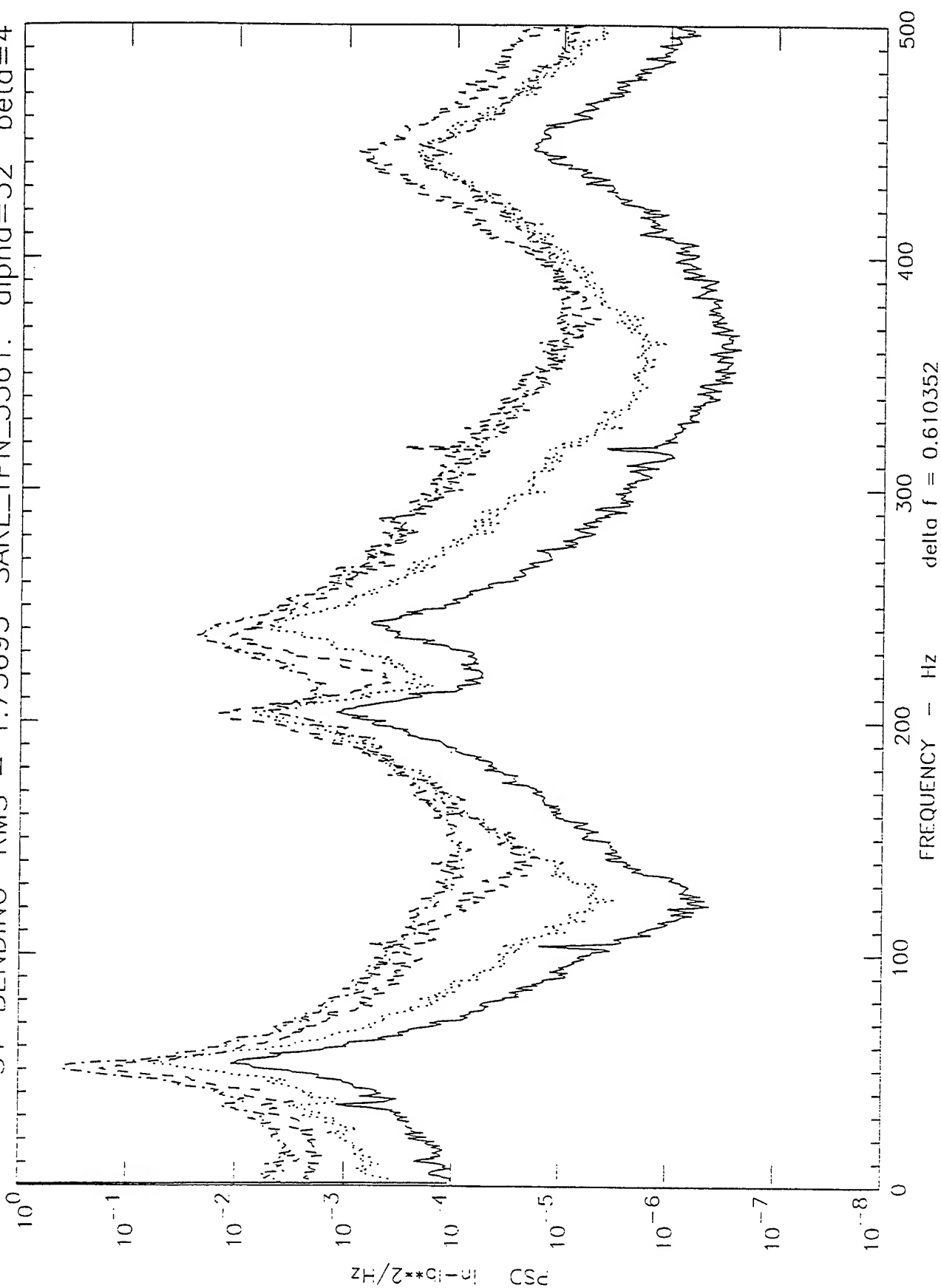


FIG 15 Critical tail Buffet test: Q=56



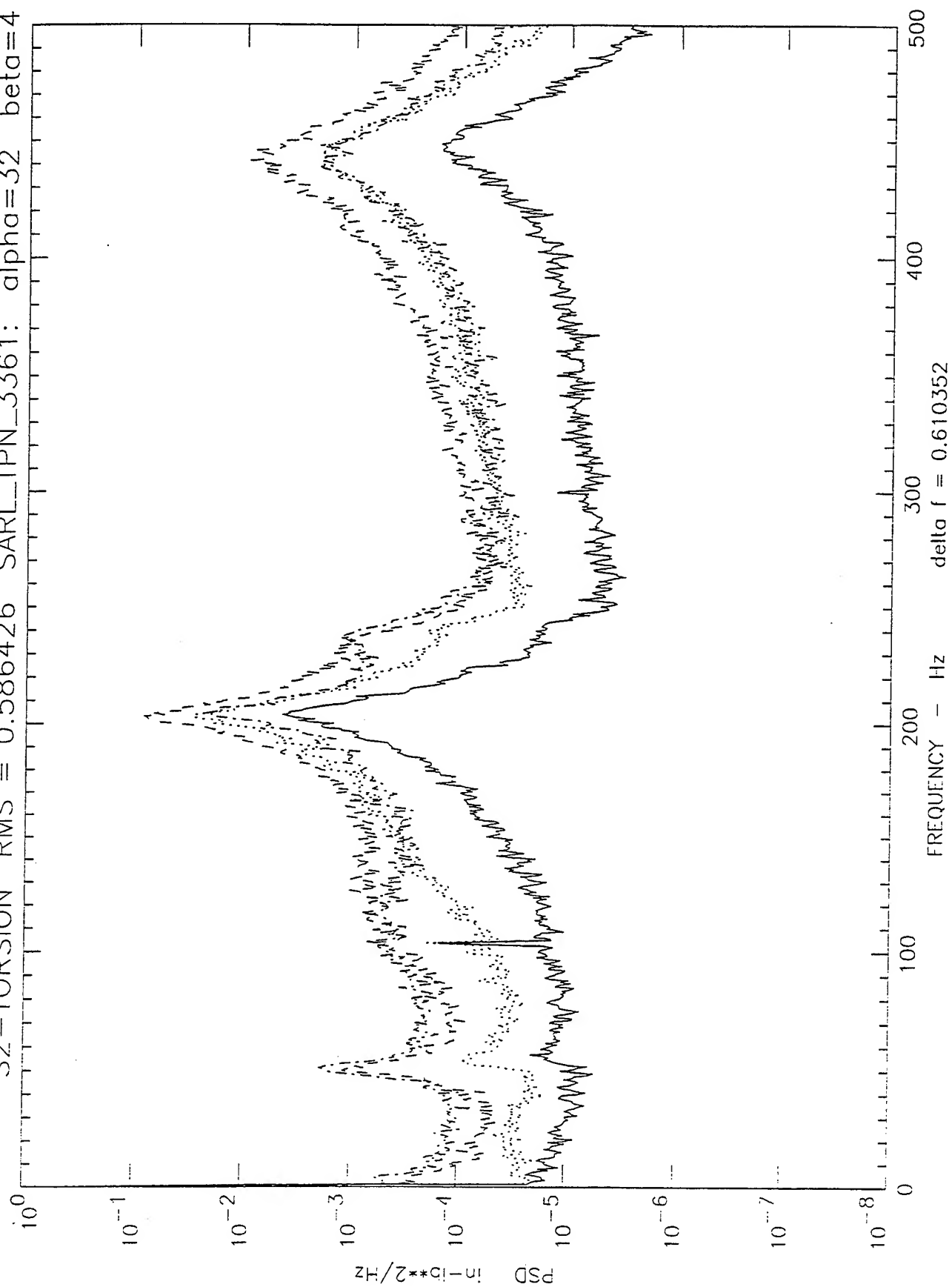
---	S1-BENDING	RMS = 0.324086	SARL_TPN_3357:	alpha=20	beta=4
---	S1-BENDING	RMS = 0.722612	SARL_TPN_3359:	alpha=24	beta=4
---	S1-BENDING	RMS = 1.20685	SARL_TPN_3360:	alpha=28	beta=4
---	S1-BENDING	RMS = 1.73695	SARL_TPN_3361:	alpha=32	beta=4

wbp=45  
wbp=45  
wbp=45  
wbp=45

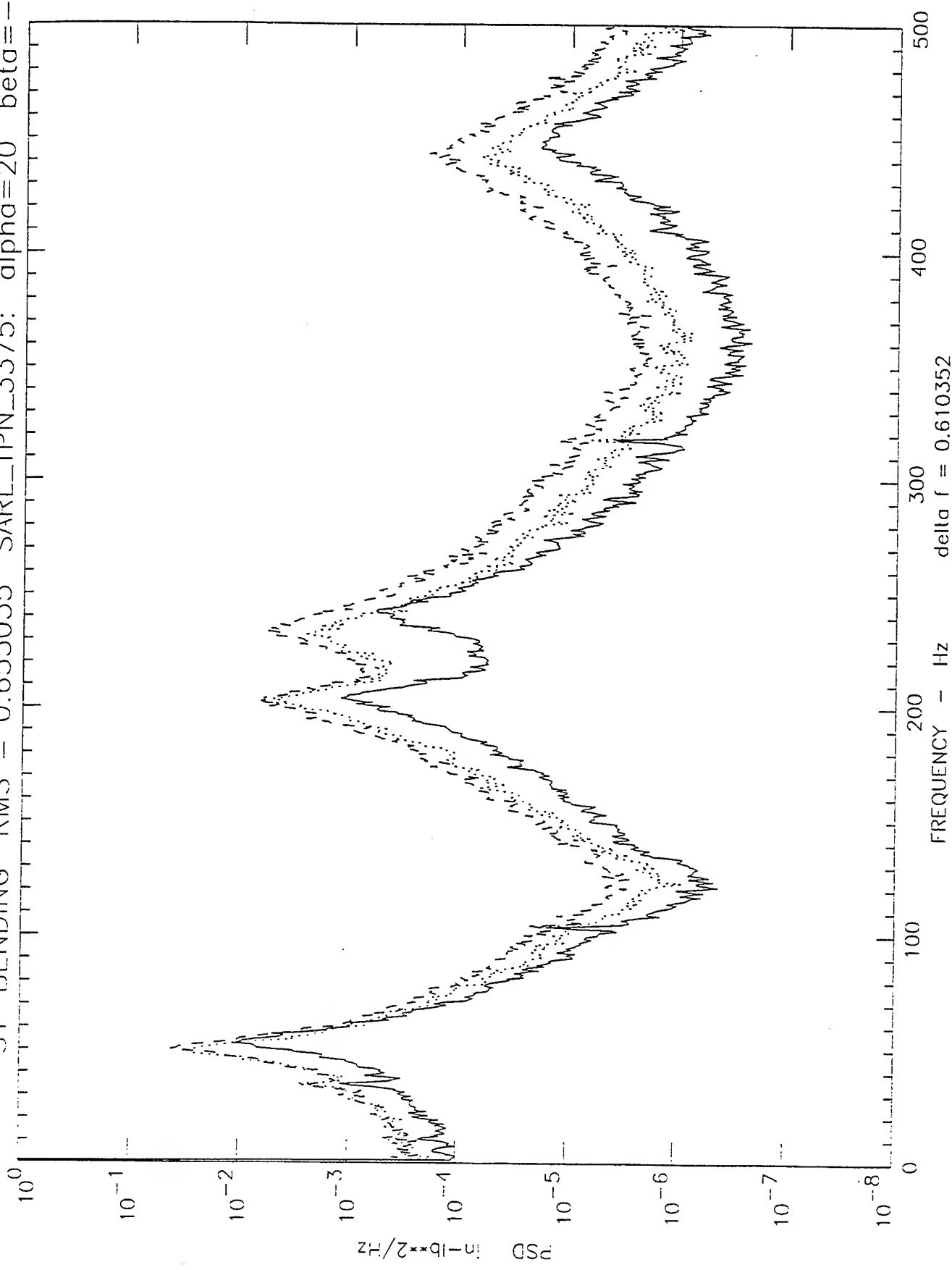


# Physical Tail Buffet test: Q=56

S2-TORSION RMS = 0.232342 SARL\_TPN\_3357: alpha=20 beta=4 wbp=45  
 S2-TORSION RMS = 0.609214 SARL\_TPN\_3359: alpha=24 beta=4 wbp=45  
 S2-TORSION RMS = 1.02896 SARL\_TPN\_3360: alpha=28 beta=4 wbp=45  
 S2-TORSION RMS = 0.586426 SARL\_TPN\_3361: alpha=32 beta=4 wbp=45



S1-BENDING RMS = 0.324086 SARL\_TPN\_3357: alpha=20 beta=4 wbp=45  
 S1-BENDING RMS = 0.549562 SARL\_TPN\_3339: alpha=20 beta=0 wbp=45  
 S1-BENDING RMS = 0.655035 SARL\_TPN\_3375: alpha=20 beta=-4 wbp=45



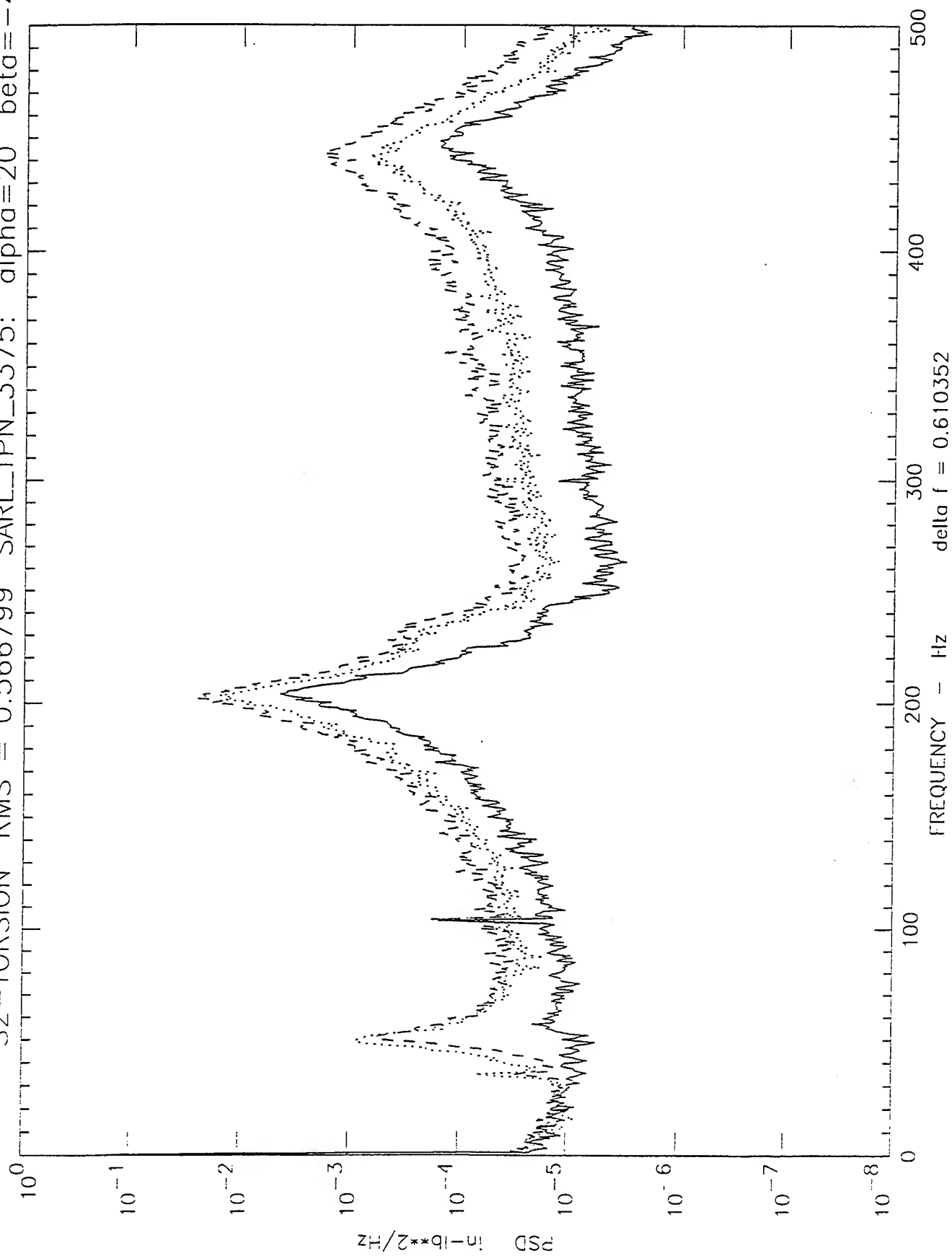
wp=45  
wp=45  
wp=45

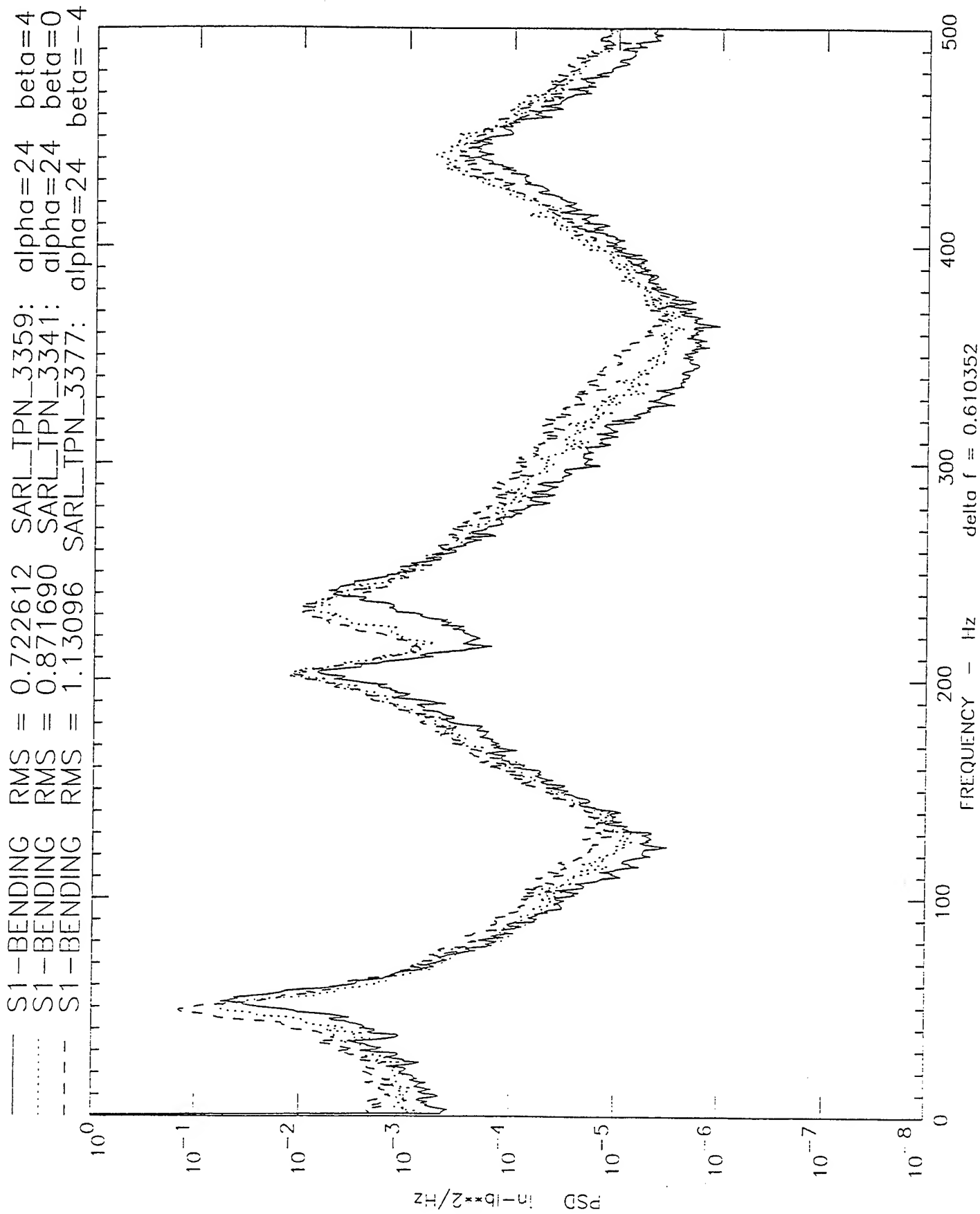
alpha=20 beta=4  
alpha=20 beta=0  
alpha=20 beta=-4

SARL\_TPN\_3357:  
SARL\_TPN\_3339:  
SARL\_TPN\_3375:

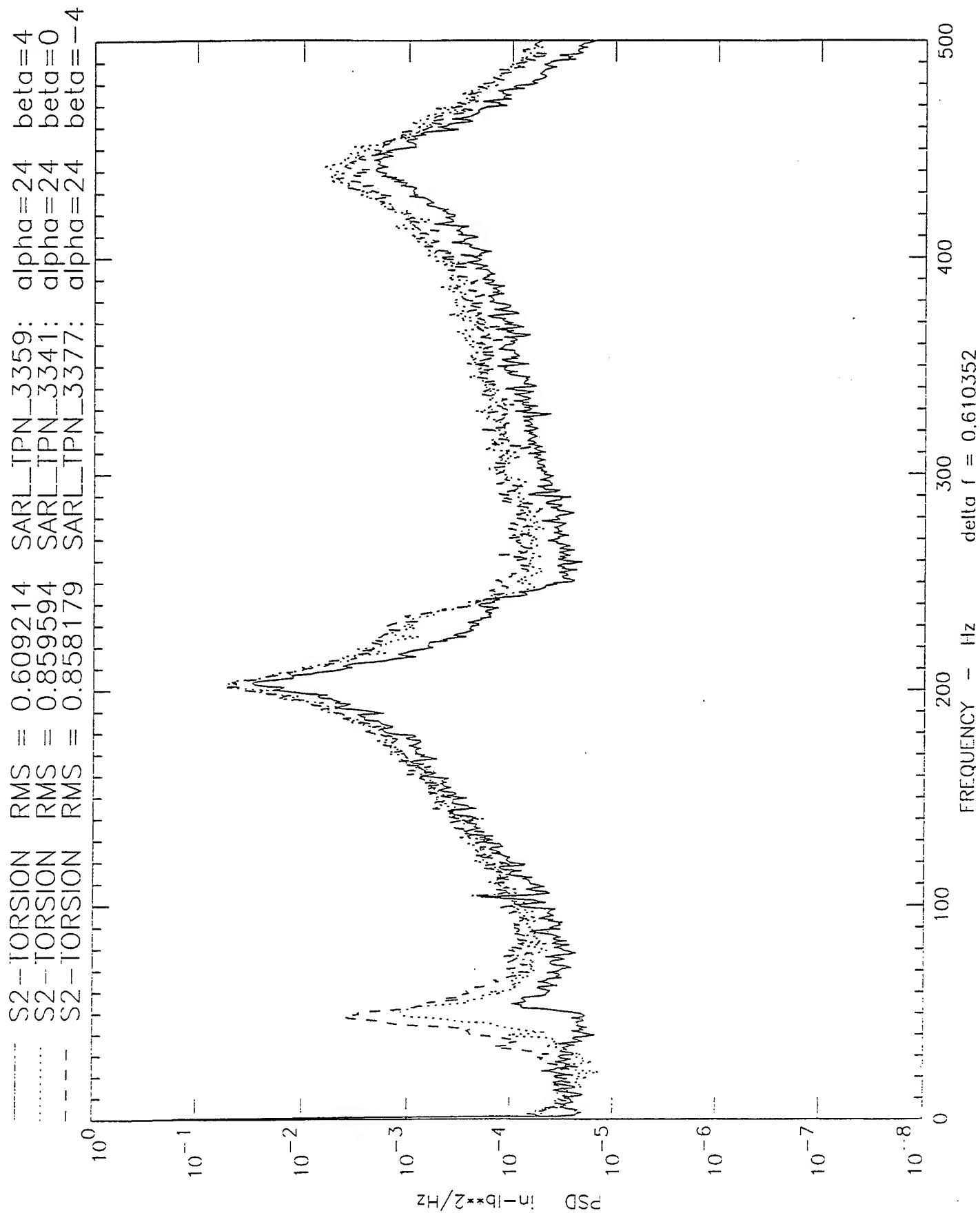
RMS = 0.232342  
RMS = 0.431627  
RMS = 0.566799

S2-TORSION  
S2-TORSION  
S2-TORSION





Physical Tail Buffet Test: Q=56





wbp=45  
wbp=45  
wbp=45

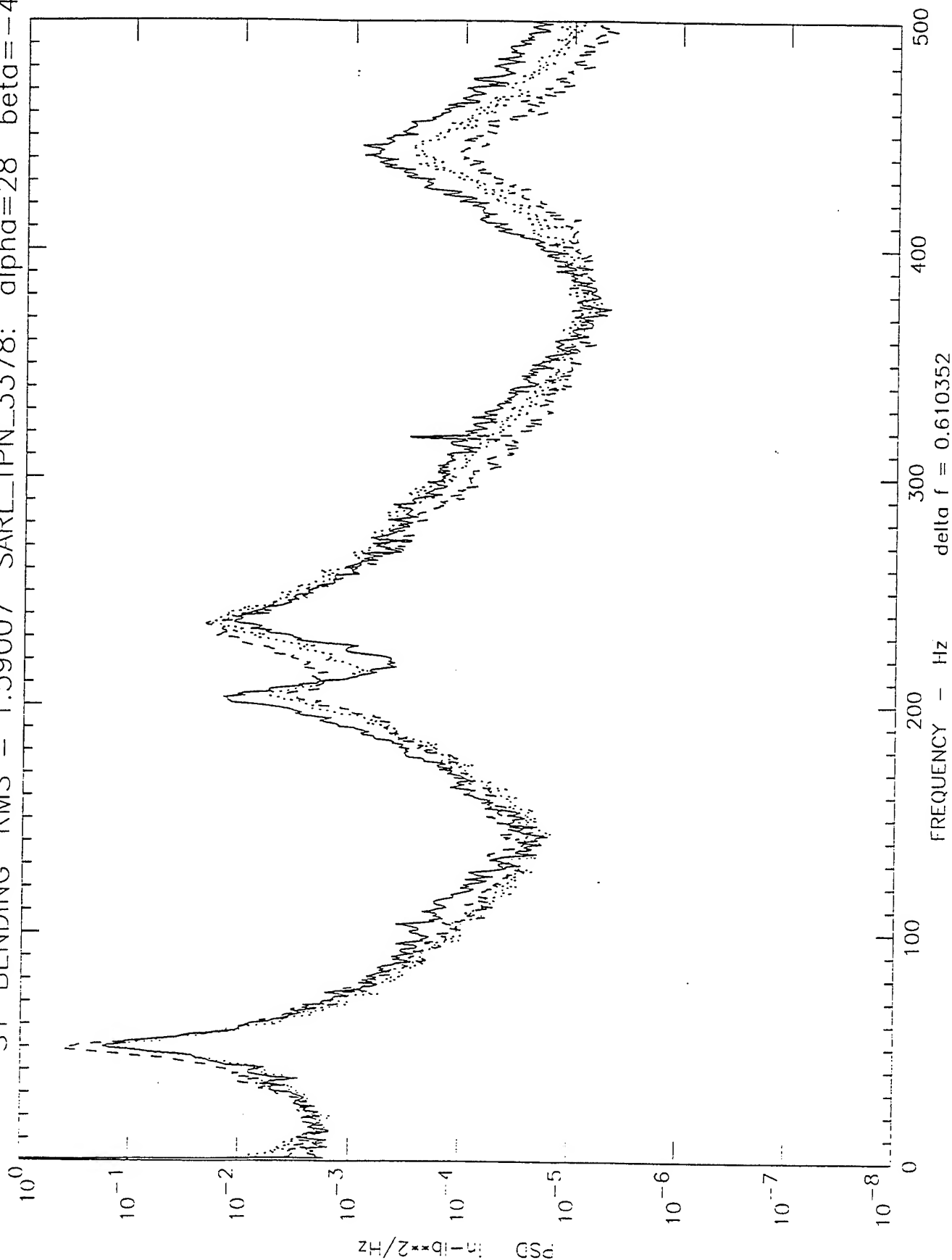
beta=4  
beta=0  
beta=-4

alpha=28  
alpha=28  
alpha=28

SARL\_TPN\_3360:  
SARL\_TPN\_3342:  
SARL\_TPN\_3378:

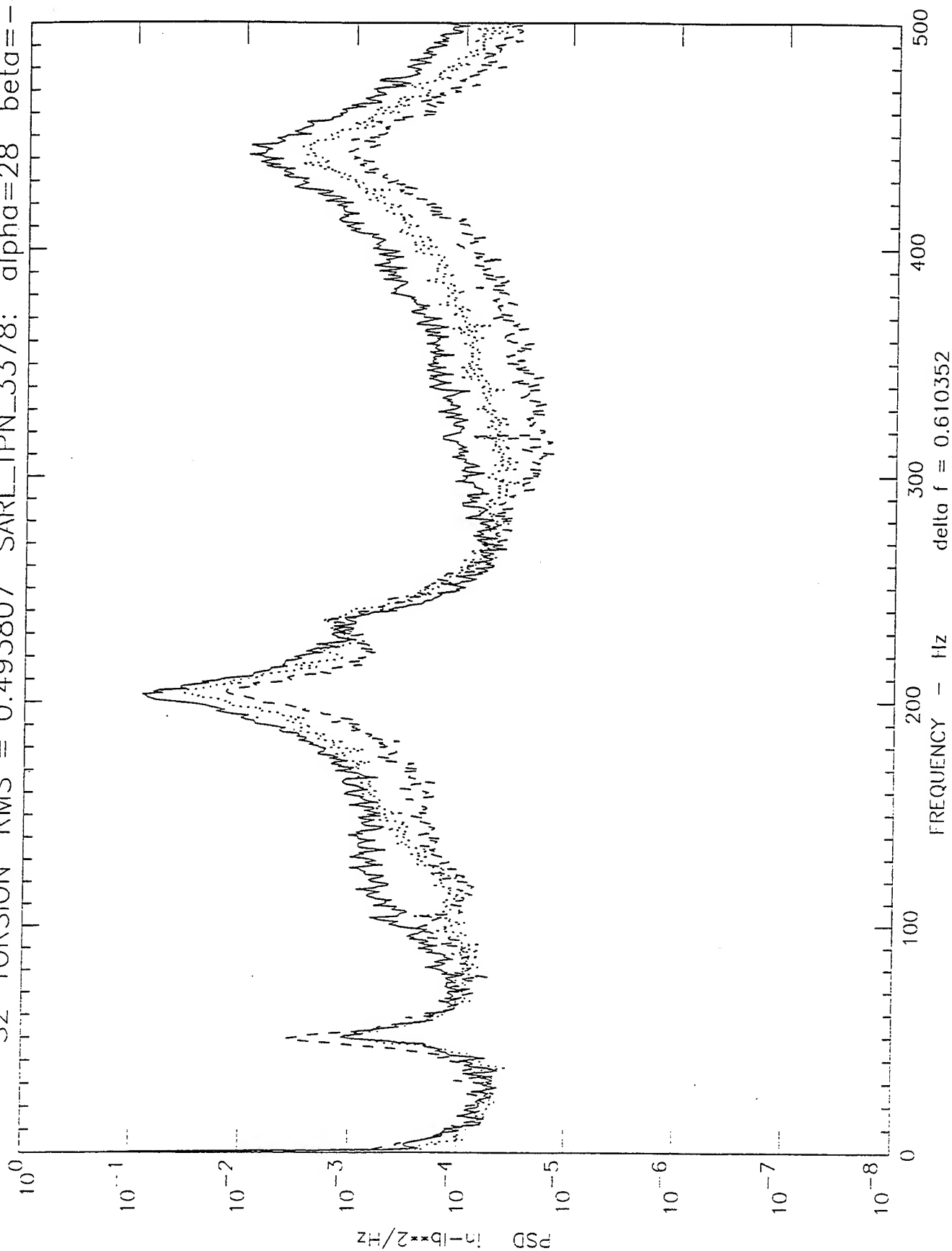
RMS = 1.20685  
RMS = 1.15022  
RMS = 1.59007

S1-BENDING  
S1-BENDING  
S1-BENDING



F-15 critical tail Buffet test: Q=56

--- S2-TORSION RMS = 1.02896 SARL\_TPN\_3360: alpha=28 beta=4 wbp=45  
 ..... S2-TORSION RMS = 0.709737 SARL\_TPN\_3342: alpha=28 beta=0 wbp=45  
 --- S2-TORSION RMS = 0.493807 SARL\_TPN\_3378: alpha=28 beta=-4 wbp=45



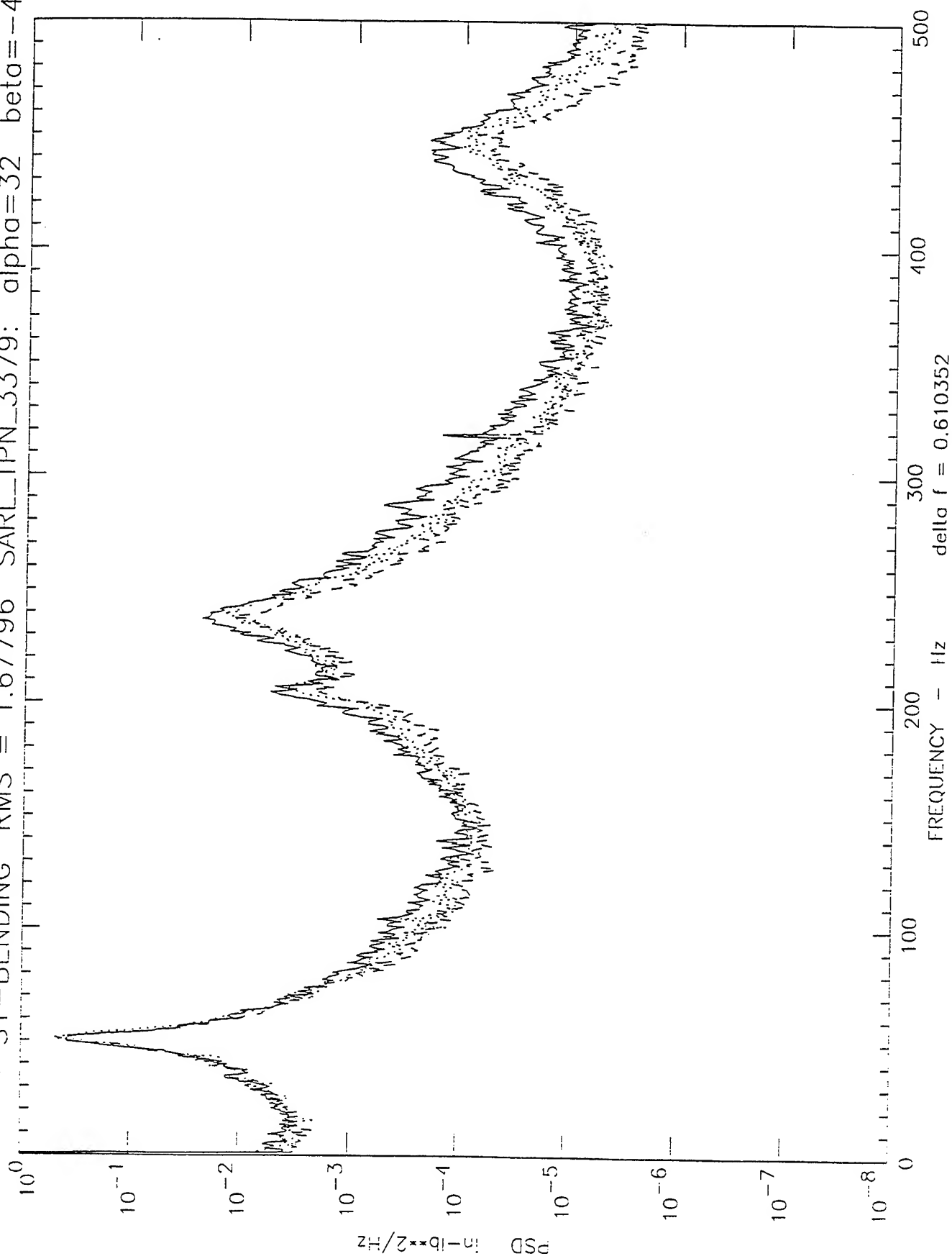
wp=45  
wp=45  
wp=45

beta=4  
beta=0  
beta=-4

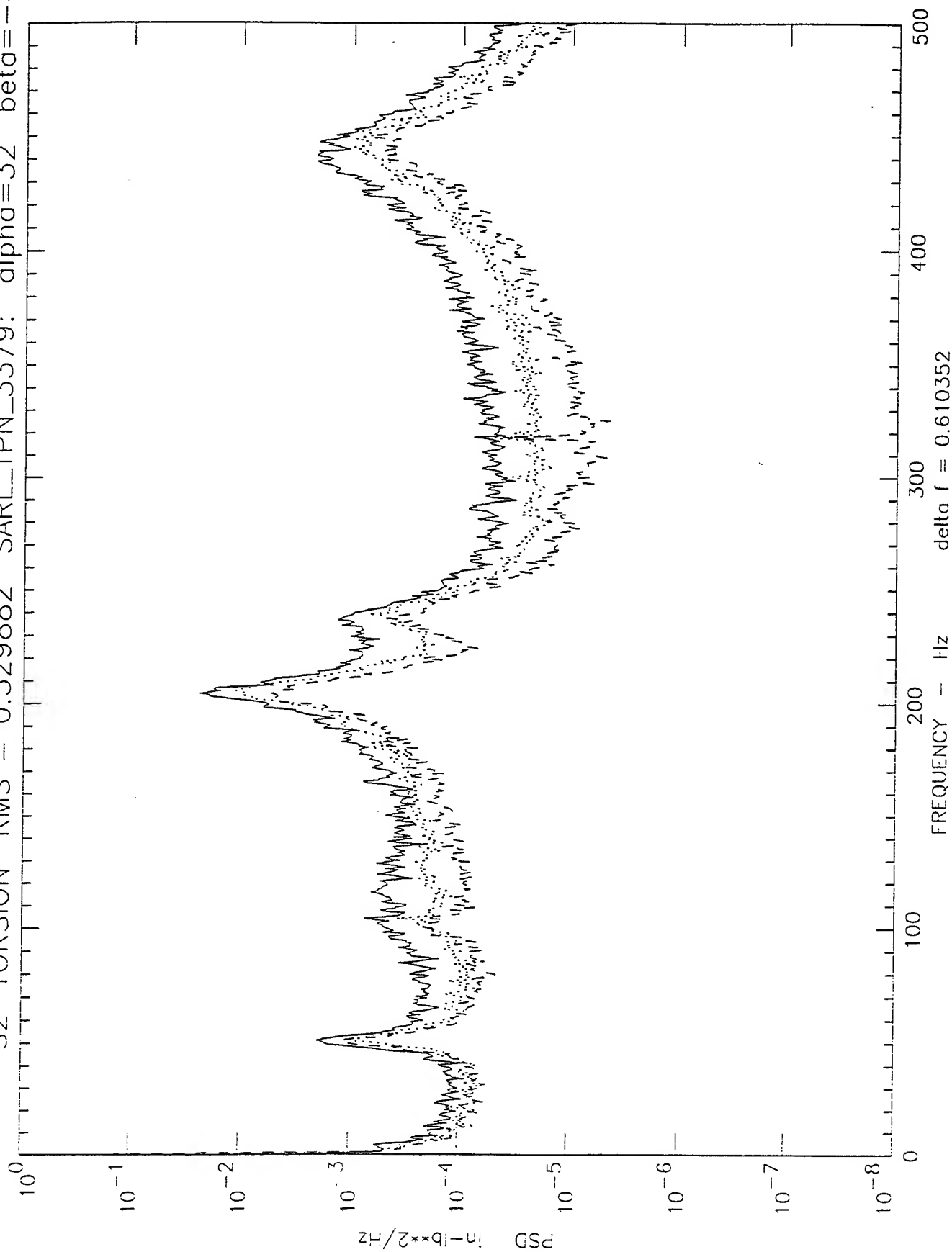
SARL\_TPN\_3361:  
SARL\_TPN\_3343:  
SARL\_TPN\_3379:

RMS = 1.73695  
RMS = 1.70740  
RMS = 1.67796

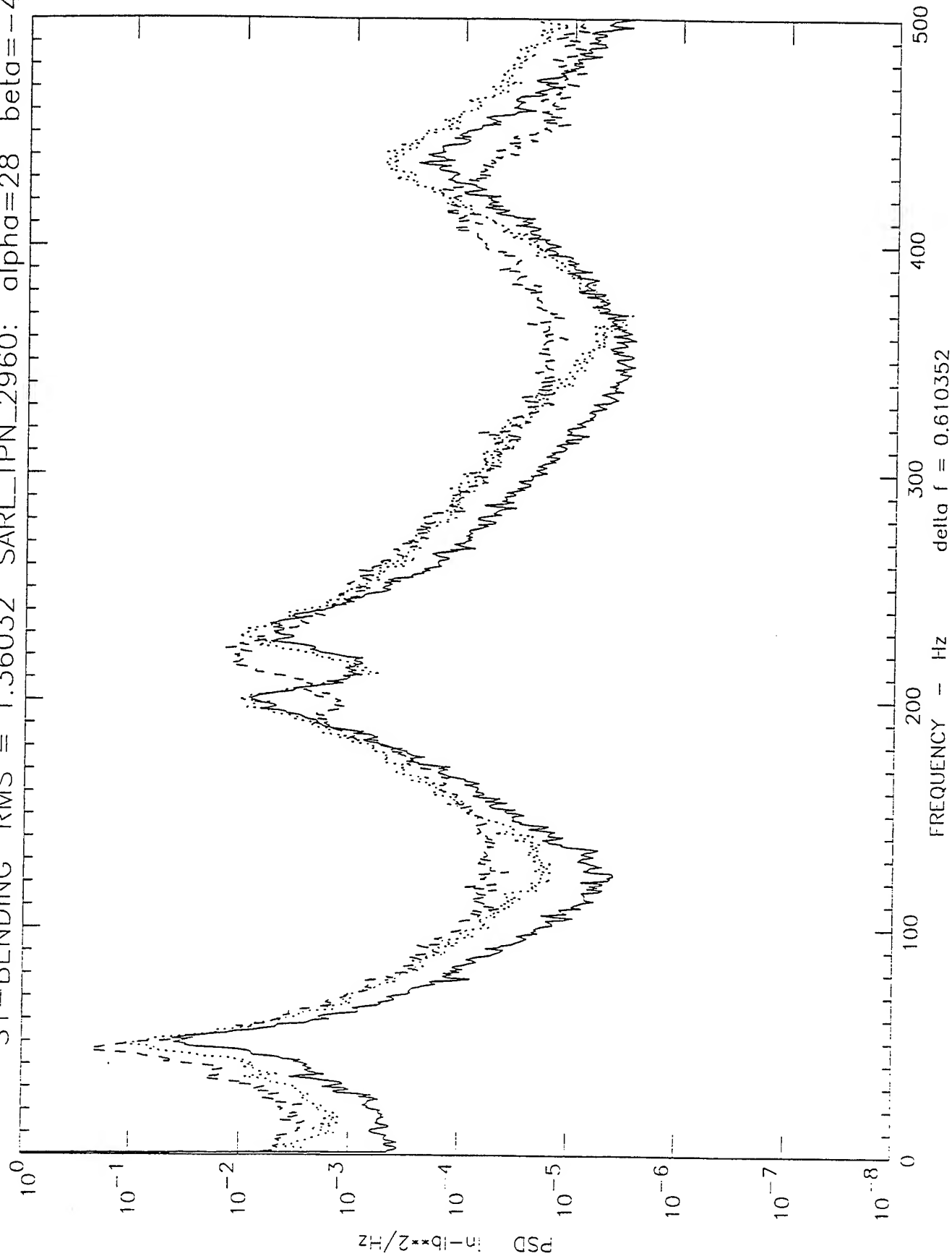
S1-BENDING  
S1-BENDING  
S1-BENDING

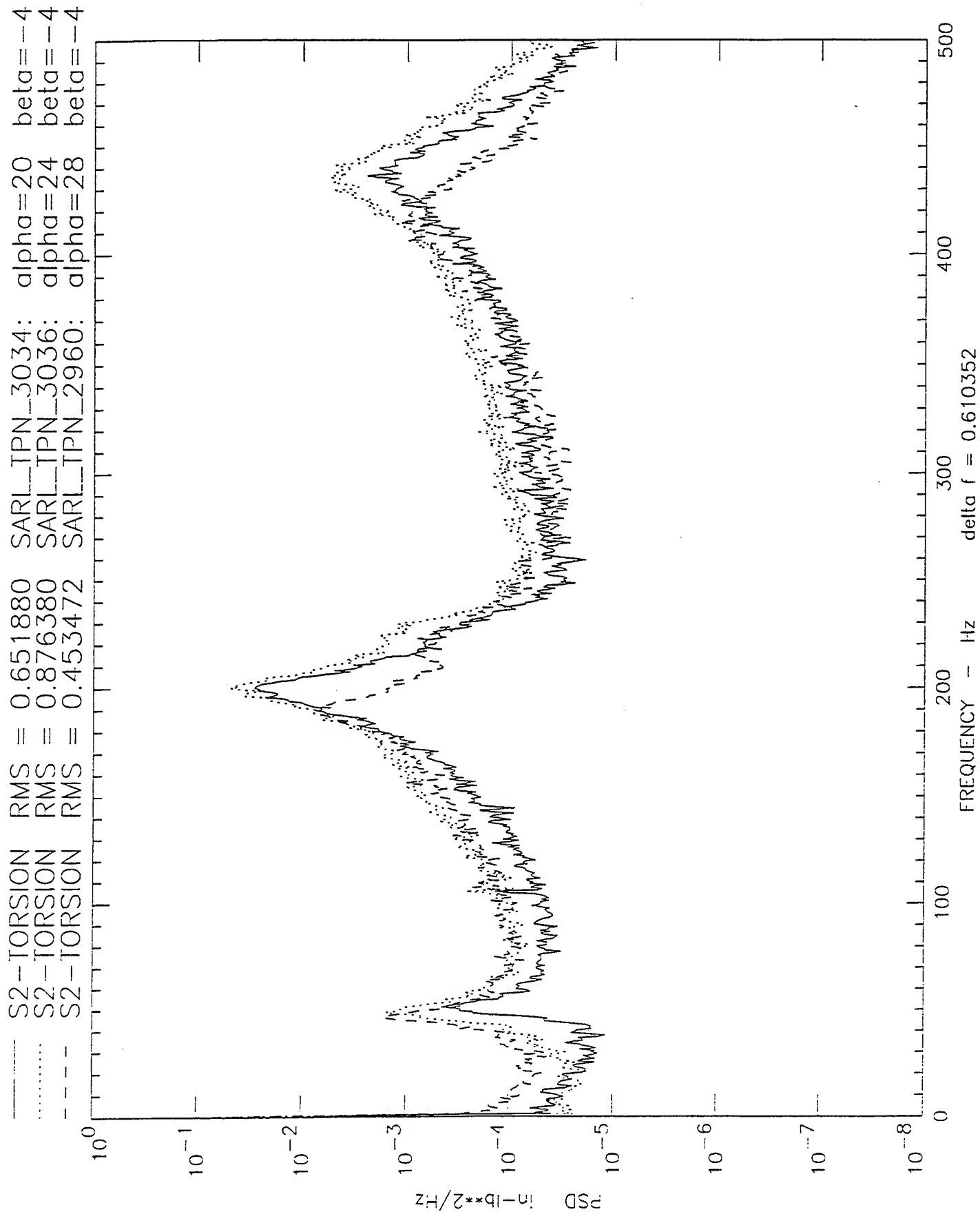


—	S2-TORSION	RMS = 0.586426	SARL_TPN_3361:	alpha=32	beta=4	wbp=45
.....	S2-TORSION	RMS = 0.425601	SARL_TPN_3343:	alpha=32	beta=0	wbp=45
----	S2-TORSION	RMS = 0.329882	SARL_TPN_3379:	alpha=32	beta=-4	wbp=45



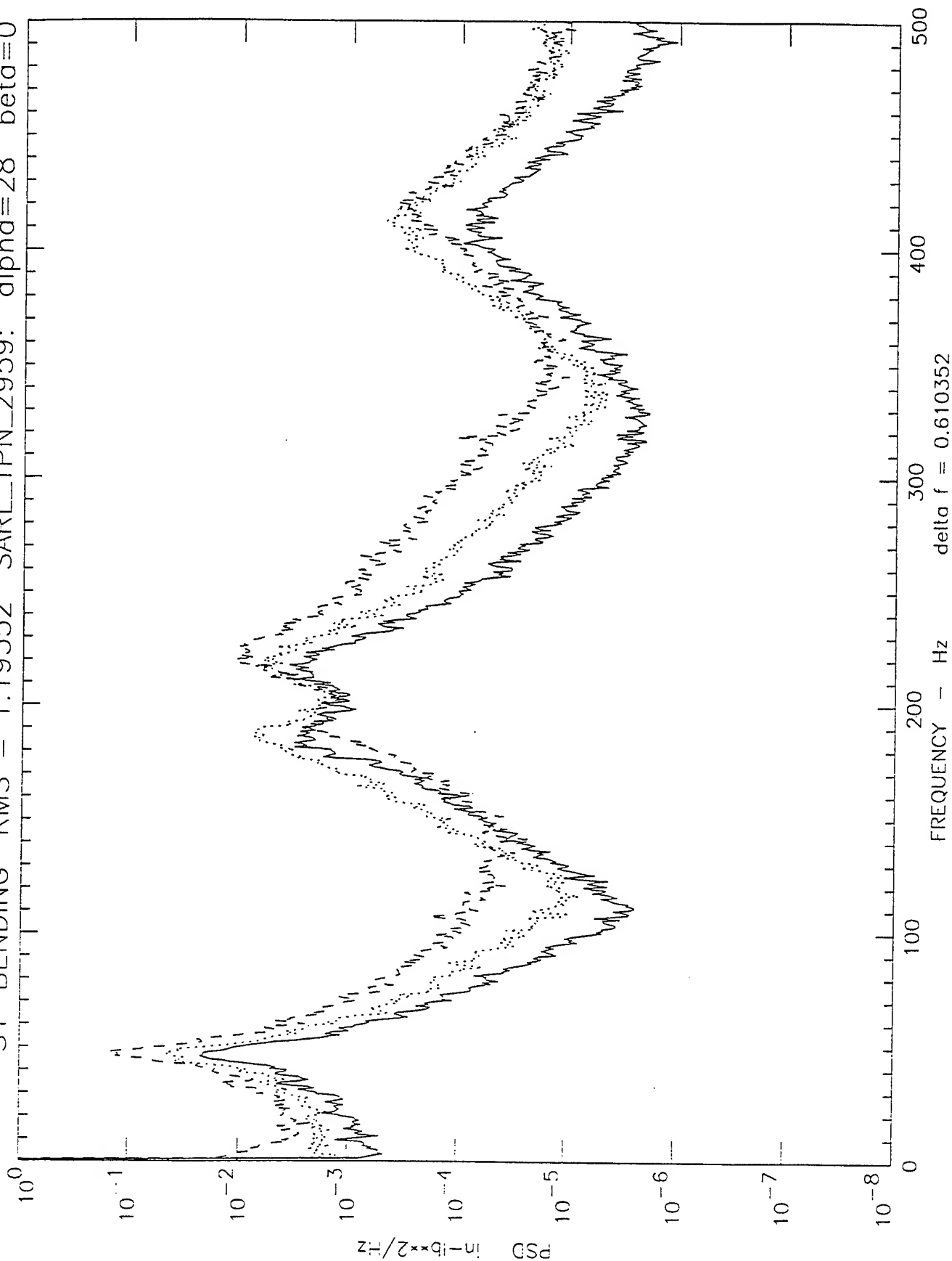
S1-BENDING RMS = 0.726848 SARL\_TPN\_3034: alpha=20 beta=-4 wbp=6  
 S1-BENDING RMS = 1.05090 SARL\_TPN\_3036: alpha=24 beta=-4 wbp=65  
 S1-BENDING RMS = 1.36032 SARL\_TPN\_2960: alpha=28 beta=-4 wbp=65





S1-BENDING RMS = 0.584972 SARL\_TPN\_2981: alpha=20 beta=0  
 S1-BENDING RMS = 0.856831 SARL\_TPN\_2983: alpha=24 beta=0  
 S1-BENDING RMS = 1.19552 SARL\_TPN\_2959: alpha=28 beta=0

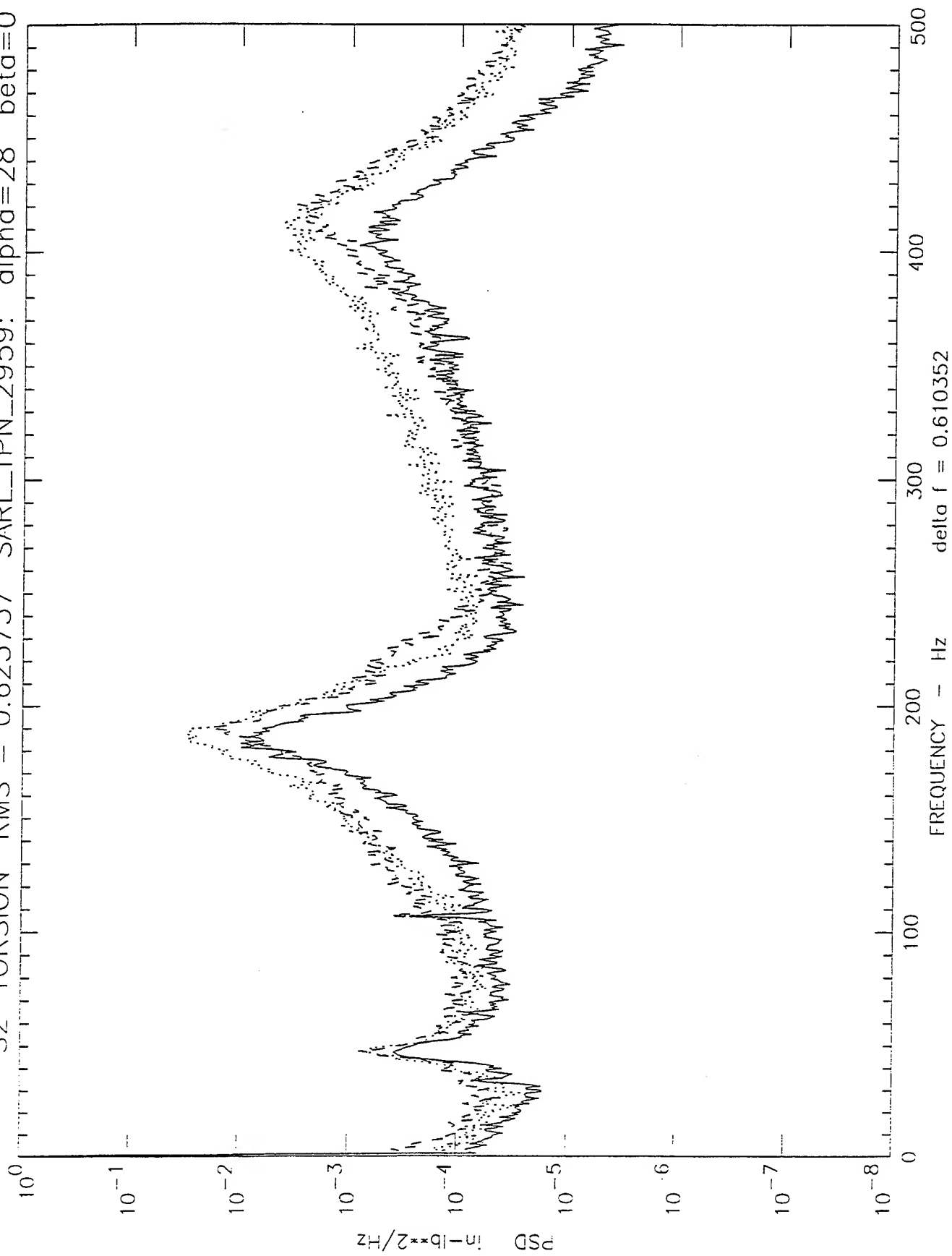
wbp=65  
 wbp=65  
 wbp=65



1 10 Critical Tail Bullet test: Q=56

---	S2-TORSION	RMS = 0.436062	SARL_TPN_2981:	alpha=20	beta=0
---	S2-TORSION	RMS = 0.836389	SARL_TPN_2983:	alpha=24	beta=0
---	S2-TORSION	RMS = 0.625737	SARL_TPN_2959:	alpha=28	beta=0

wbp=65  
wbp=65  
wbp=65





S1-BENDING RMS = 0.387771 SARL\_TPN\_3046: alpha=20 beta=4  
 S1-BENDING RMS = 0.748224 SARL\_TPN\_3048: alpha=24 beta=4  
 S1-BENDING RMS = 1.08228 SARL\_TPN\_2961: alpha=28 beta=4

wbp=65  
 wbp=65  
 wbp=65

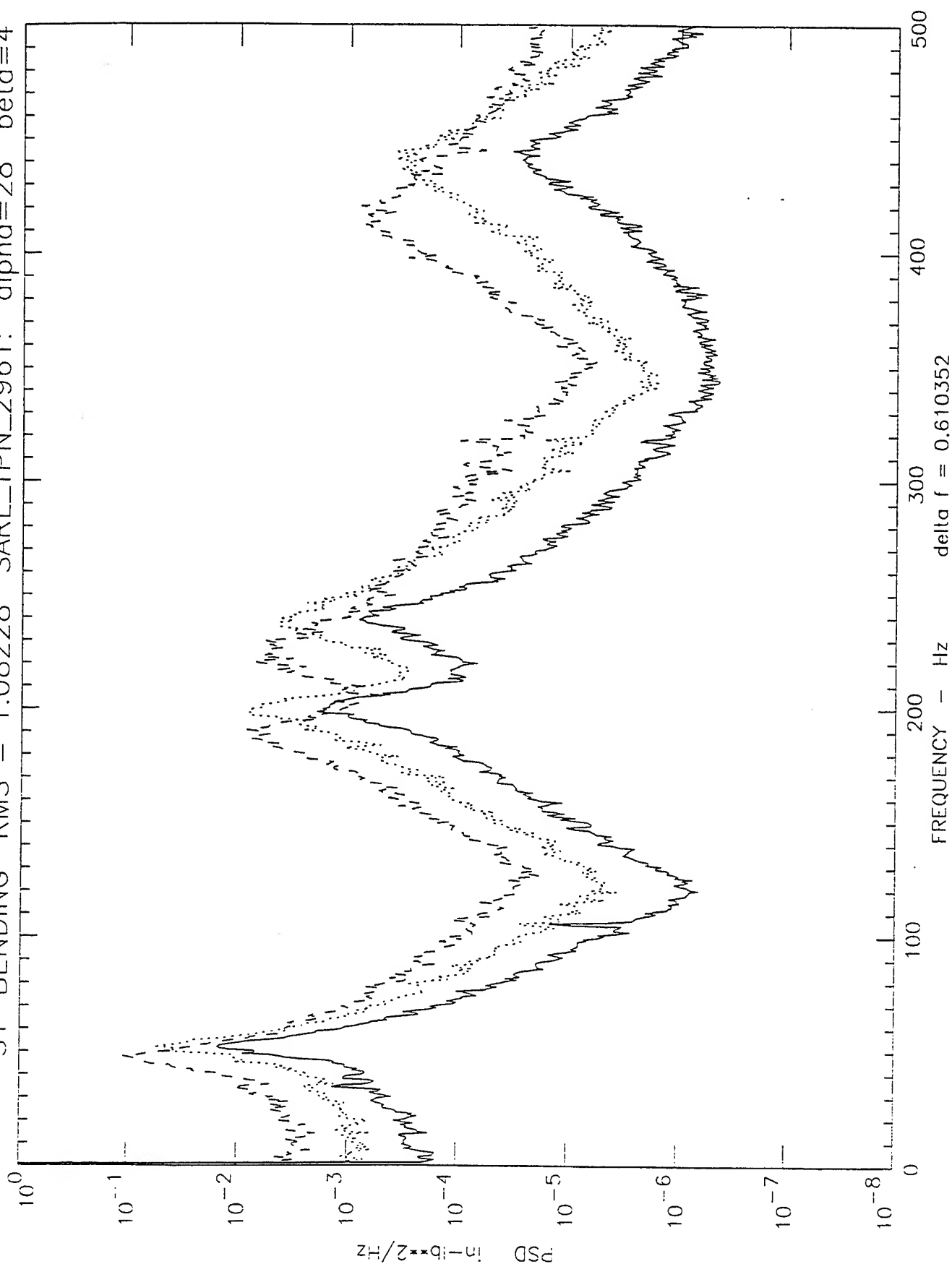
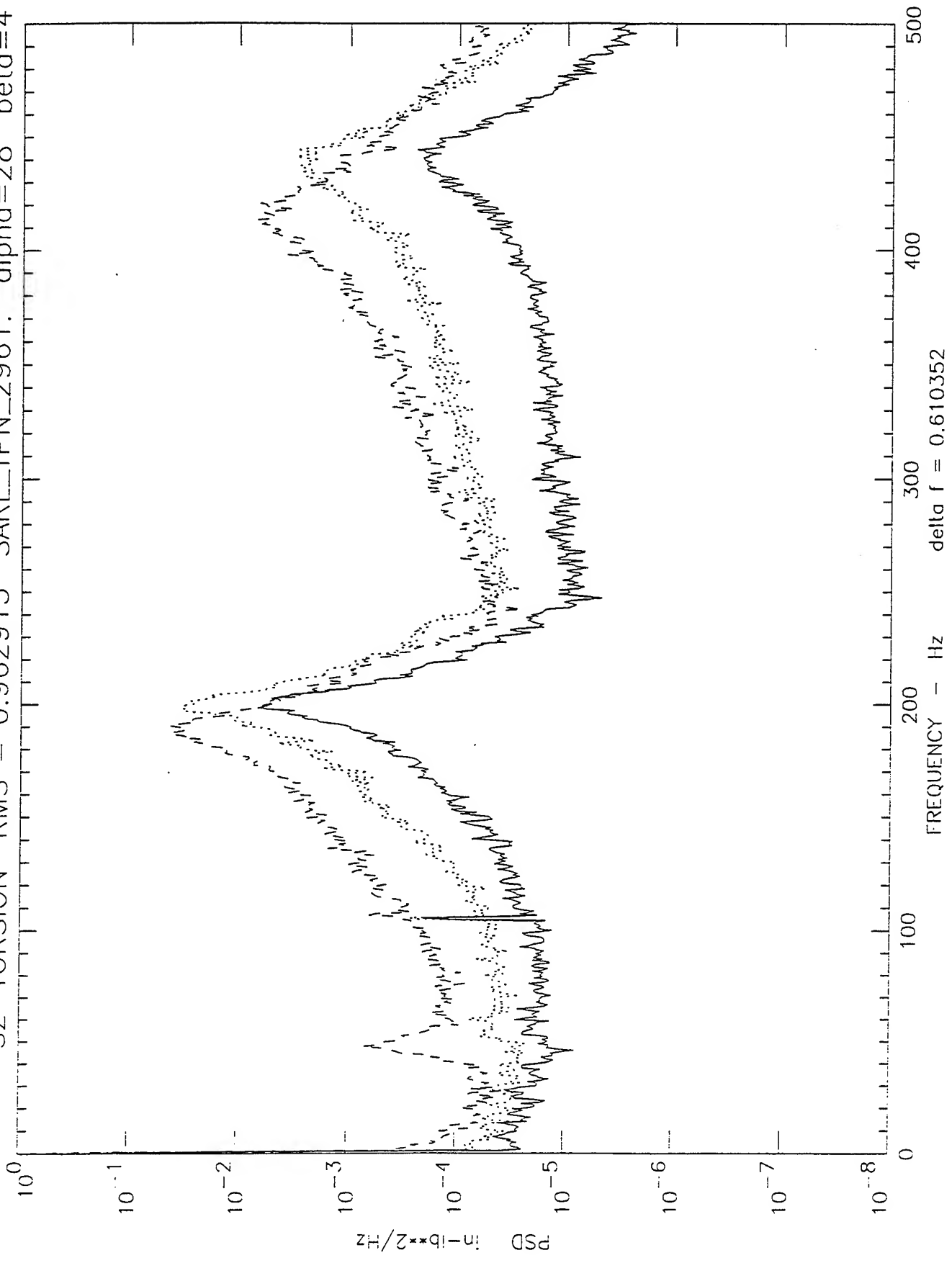


FIG 10 Local Tail Bullet Test: Q=56

—	S2-TORSION	RMS = 0.294953	SARL_TPN_3046:	alpha=20	beta=4
.....	S2-TORSION	RMS = 0.714004	SARL_TPN_3048:	alpha=24	beta=4
- - -	S2-TORSION	RMS = 0.962913	SARL_TPN_2961:	alpha=28	beta=4

wbp=65  
wbp=65  
wbp=65



S1-BENDING	
S1-BENDING	
S1-BENDING	

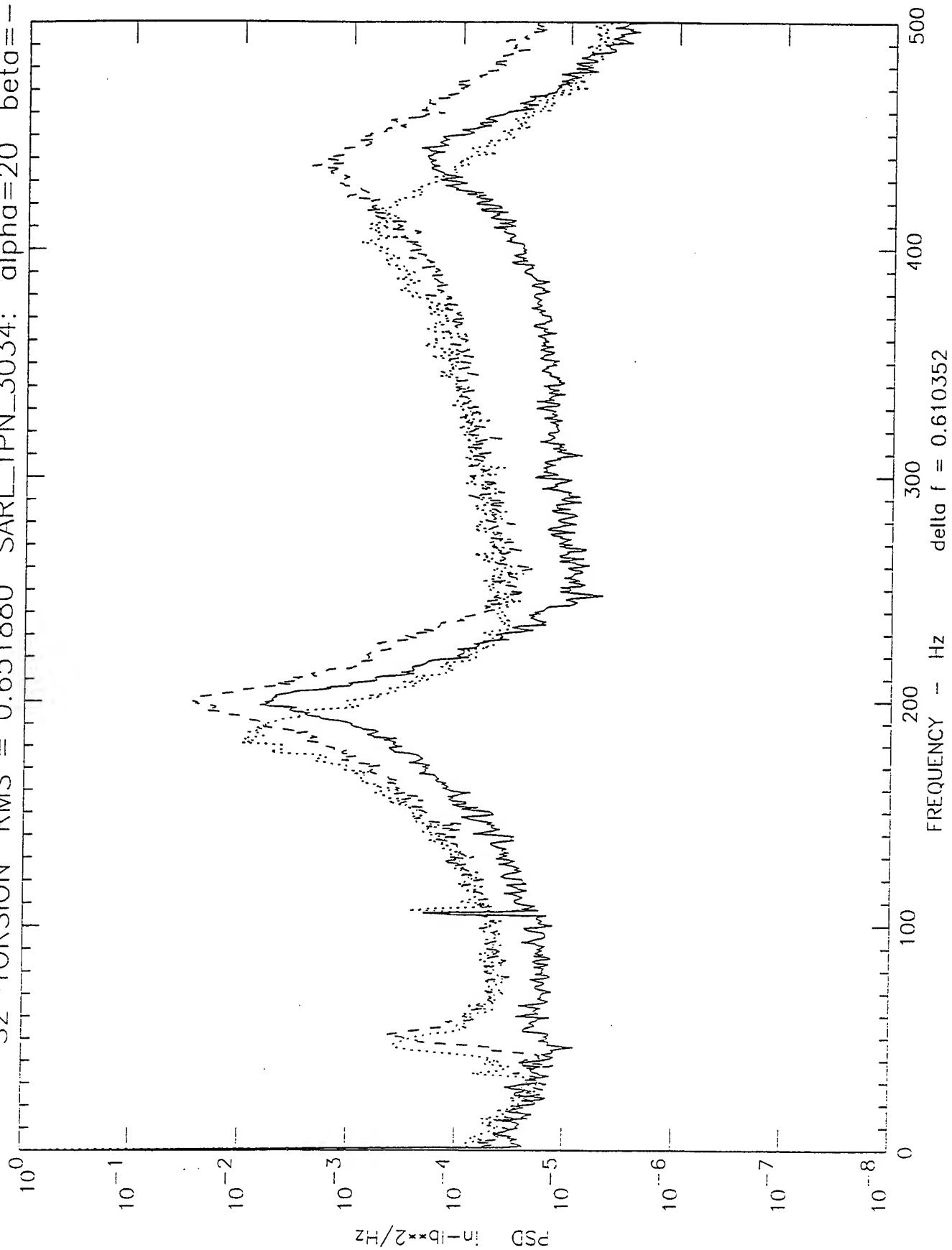


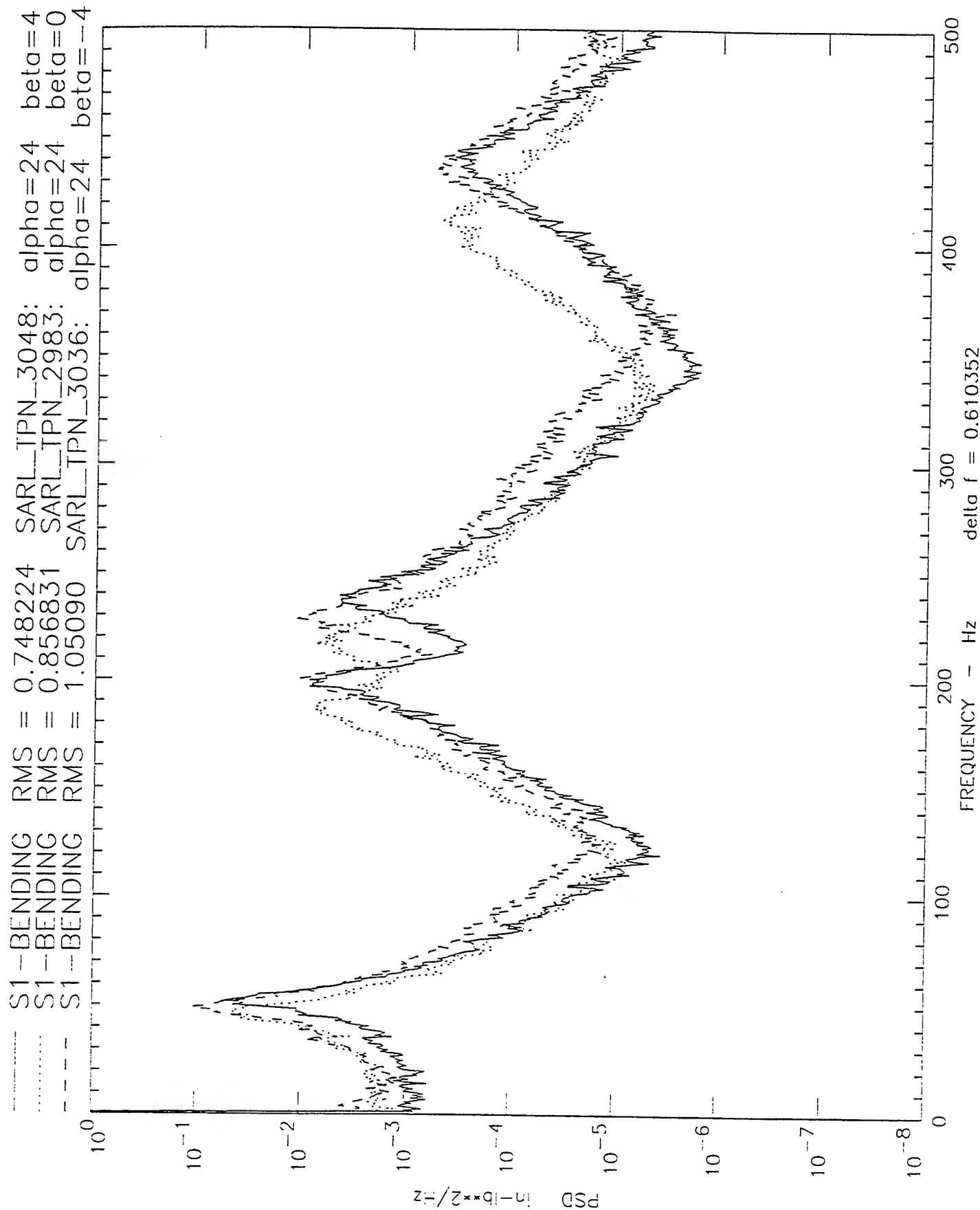
1 - 15 rical tail Bullet test: Q=56

wp=6  
wp=6  
wp=6

SARL\_TPN\_3046: alpha=20 beta=4  
SARL\_TPN\_2981: alpha=20 beta=0  
SARL\_TPN\_3034: alpha=20 beta=-4

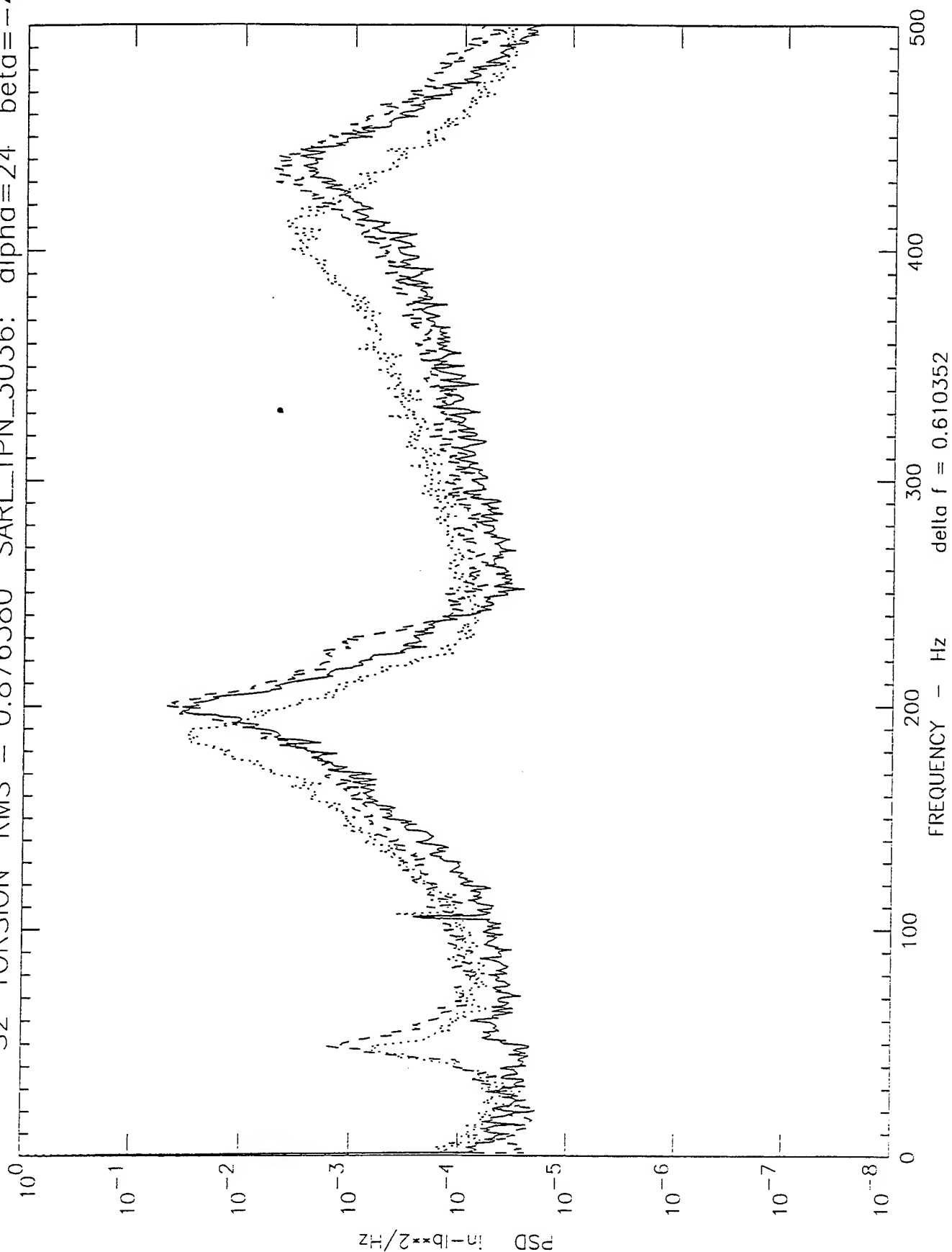
S2-TORSION RMS = 0.294953  
S2-TORSION RMS = 0.436062  
S2-TORSION RMS = 0.651880





107 linear tail bullet test: Q=56

---	S2-TORSION	RMS = 0.714004	SARL_IPN_3048:	alpha=24	beta=4	wbp=6!
---	S2-TORSION	RMS = 0.836389	SARL_IPN_2983:	alpha=24	beta=0	wbp=6!
---	S2-TORSION	RMS = 0.876380	SARL_IPN_3036:	alpha=24	beta=-4	wbp=6



```
wbp=65
wbp=65
wbp=65
```

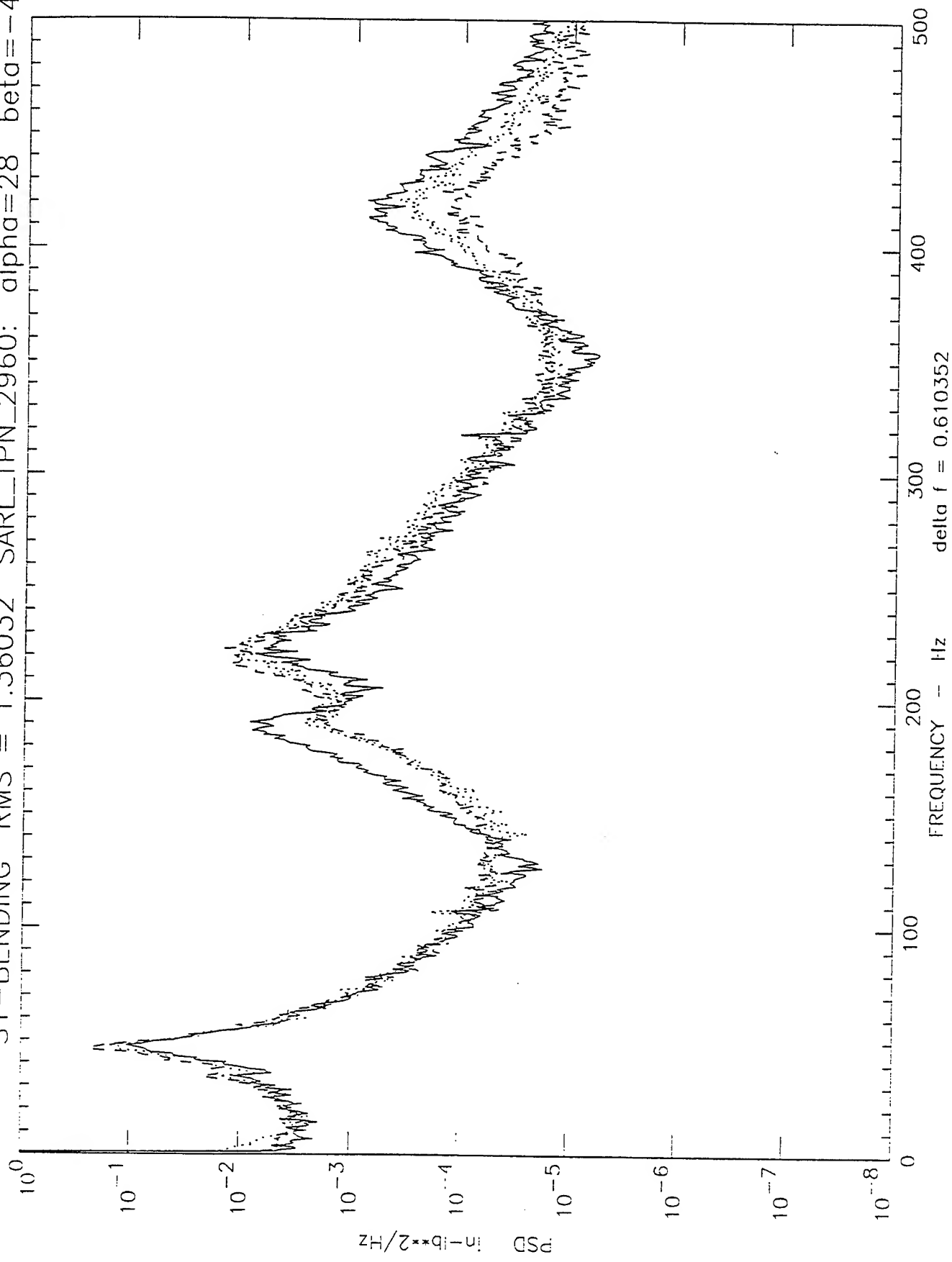
```
beta=4
beta=0
beta=-4
```

alpha=28  
alpha=28  
alpha=28

SARL\_TPN\_2961:  
SARL\_TPN\_2959:  
SARL\_TPN\_2960:

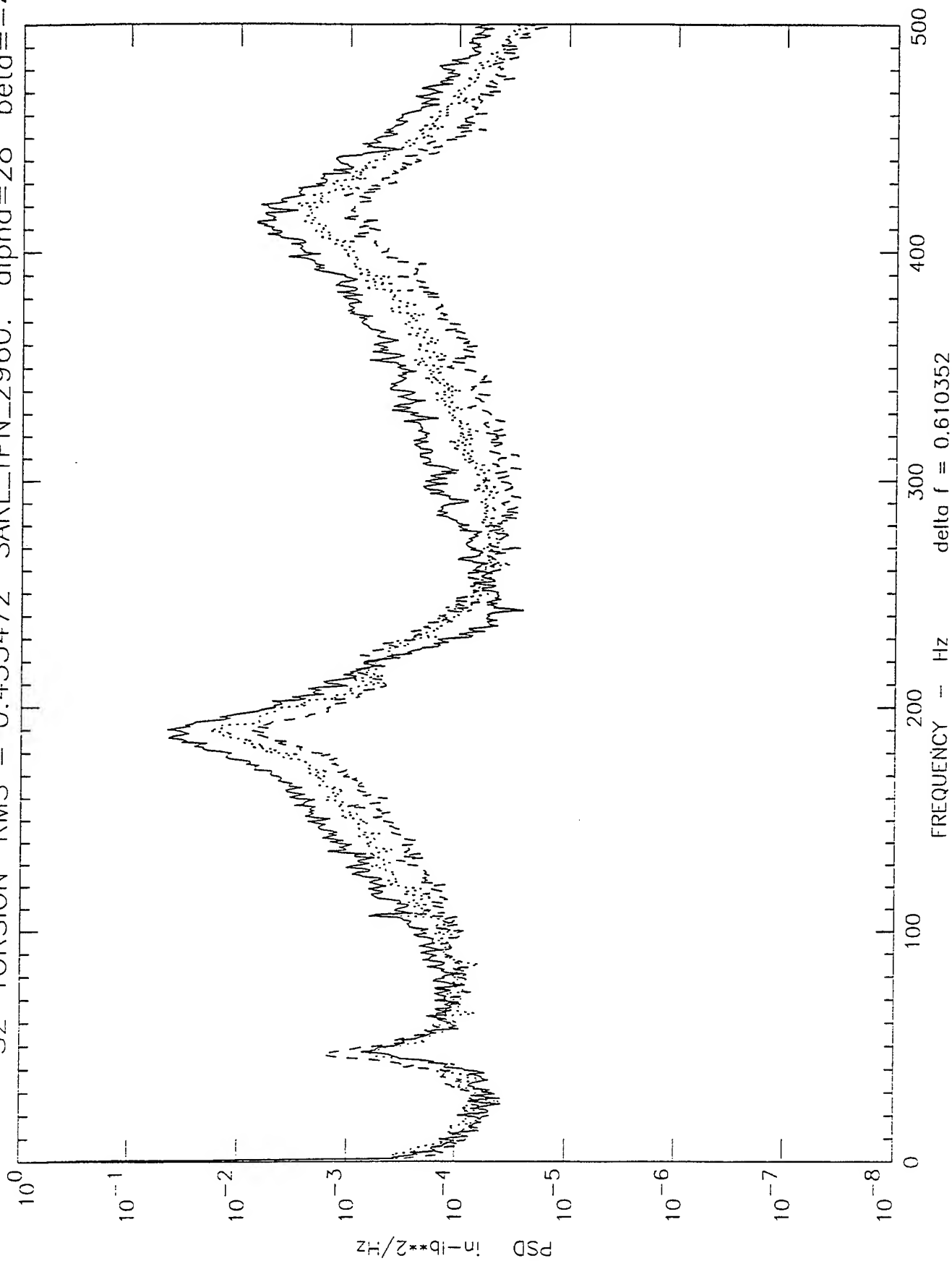
=	1.08228
=	1.19552
=	1.36032

	S1-BENDING	RMS
1	S1-BENDING	RMS
2	S1-BENDING	RMS



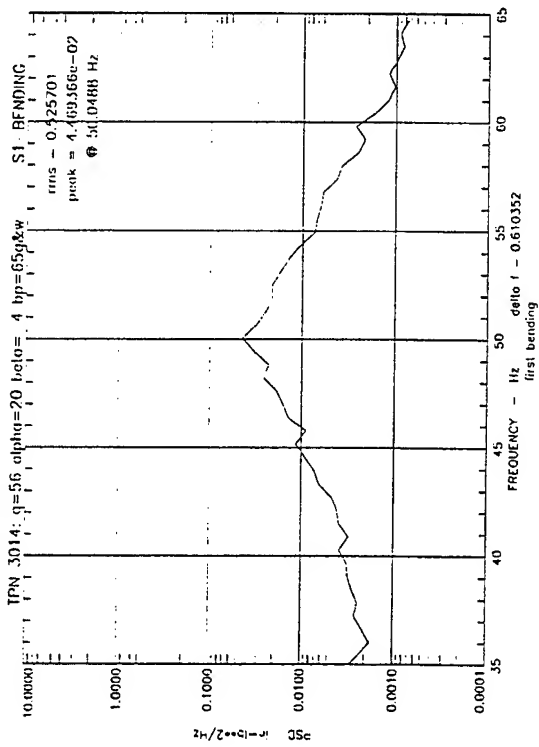
15 critical tail Buffet test: Q=56

--- S2-TORSION RMS = 0.962913 SARL\_TPN\_2961: alpha=28 beta=4 wbp=65  
 ..... S2-TORSION RMS = 0.625737 SARL\_TPN\_2959: alpha=28 beta=0 wbp=65  
 - - - S2-TORSION RMS = 0.453472 SARL\_TPN\_2960: alpha=28 beta=-4 wbp=65

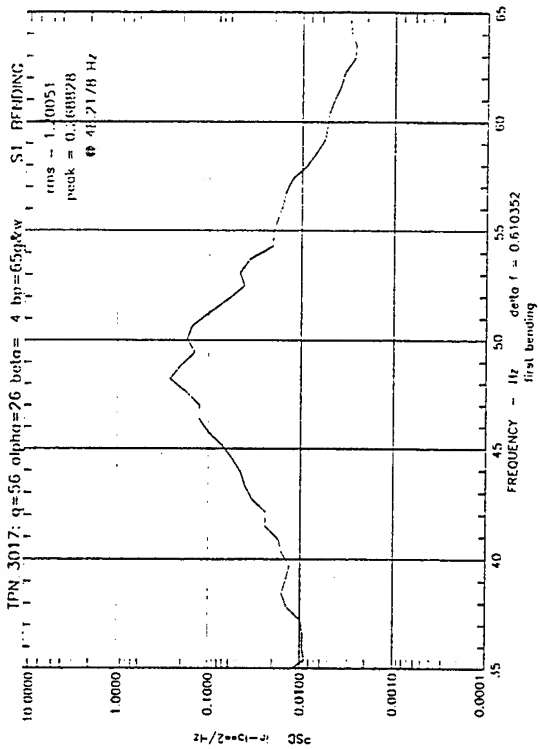




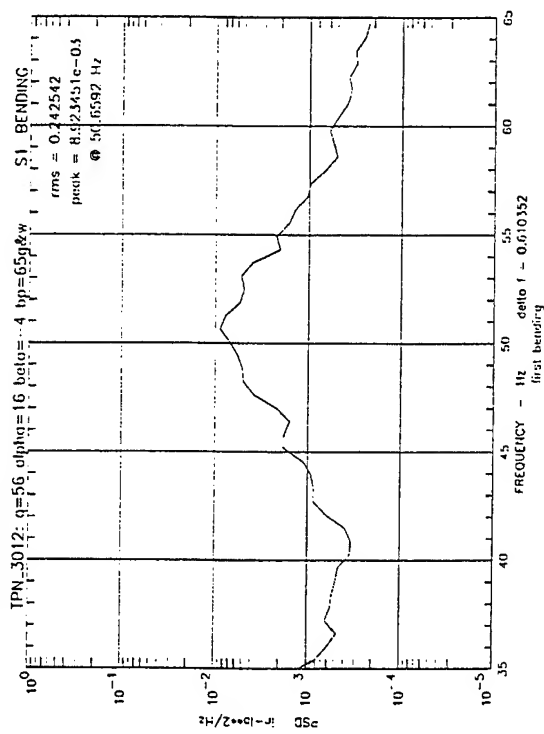
F-15 Tail Buffet Test



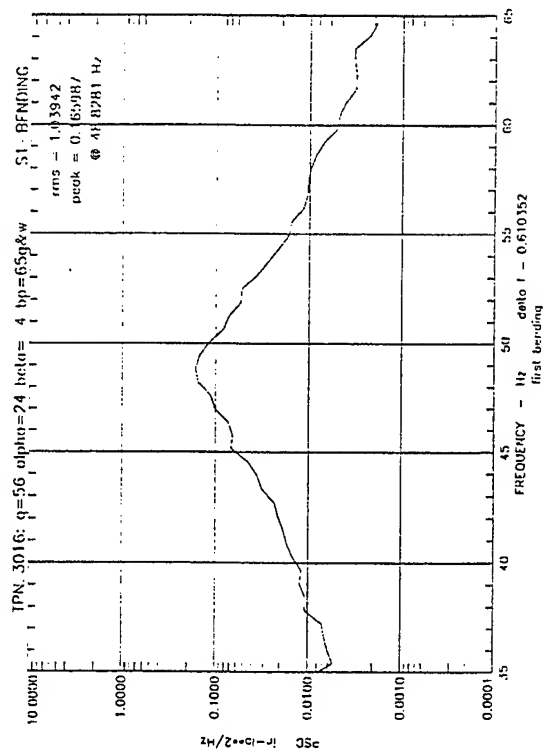
F-15 Tail Buffet Test



F-15 Tail Buffet Test



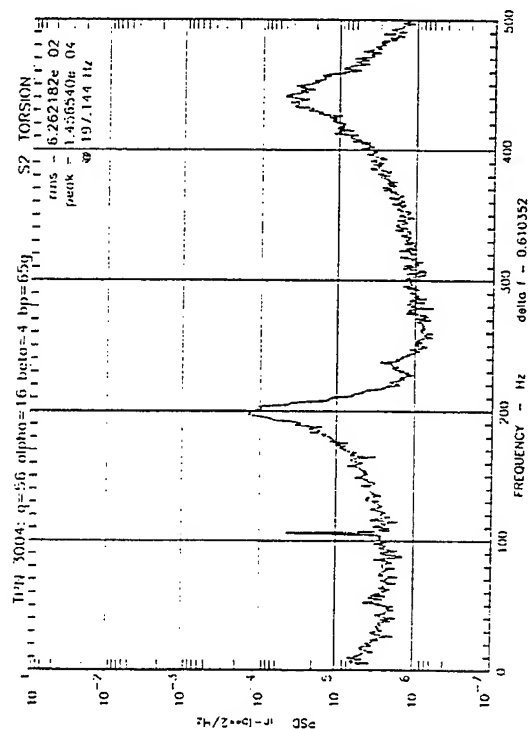
F-15 Tail Buffet Test



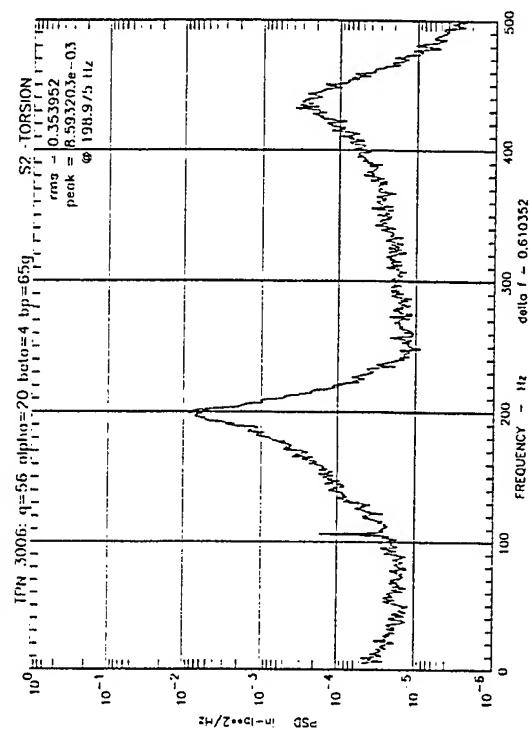
**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION  
PSD GRAPHS**

**2.1.1.2 GBP = 65 psi, BETA= 0, +4, -4, ALPHA = 0....32 Deg**

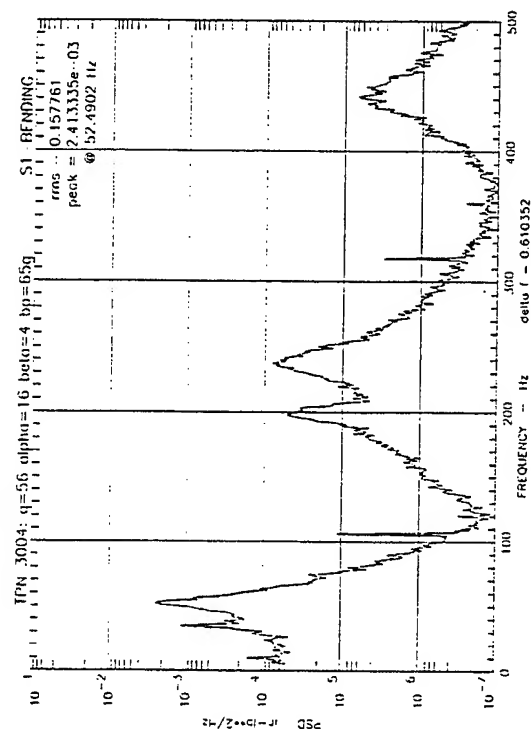
F 15 Tail Buffet Test



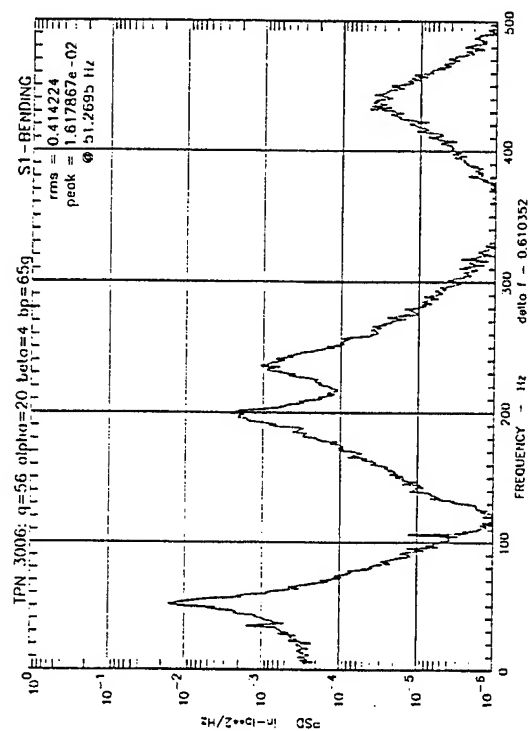
F 15 Tail Buffet Test



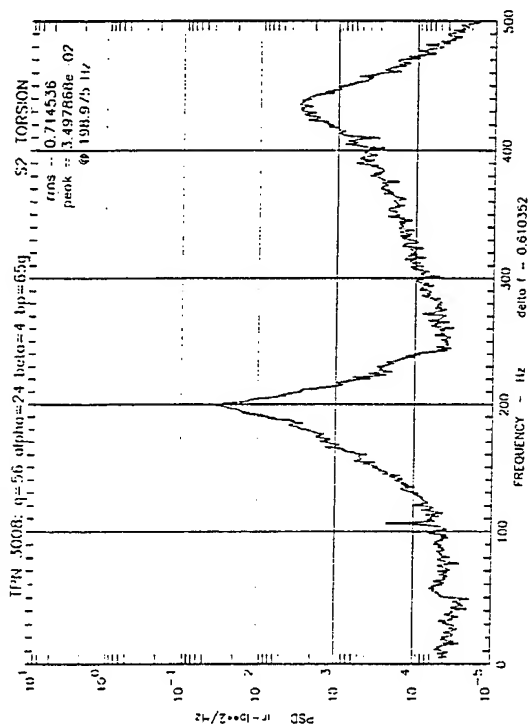
F 15 Tail Buffet Test



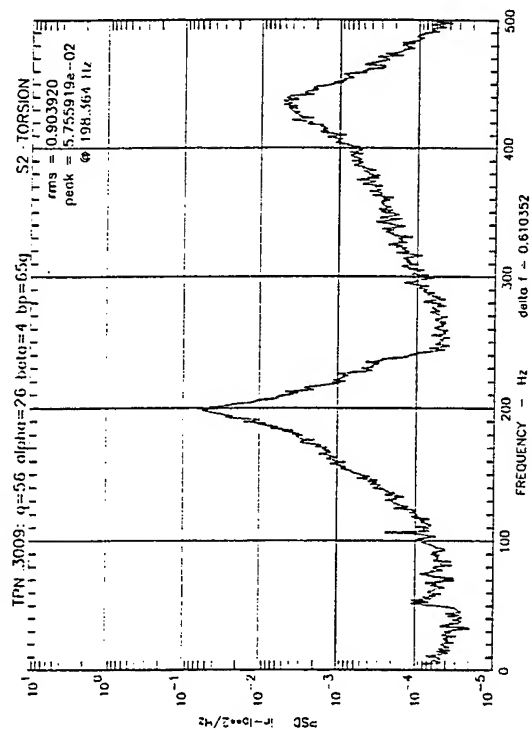
F 15 Tail Buffet Test



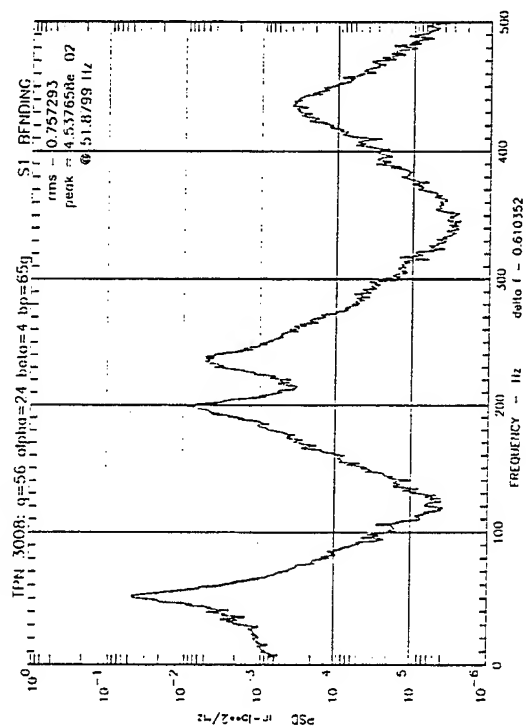
F 15 Tail Buffet Test



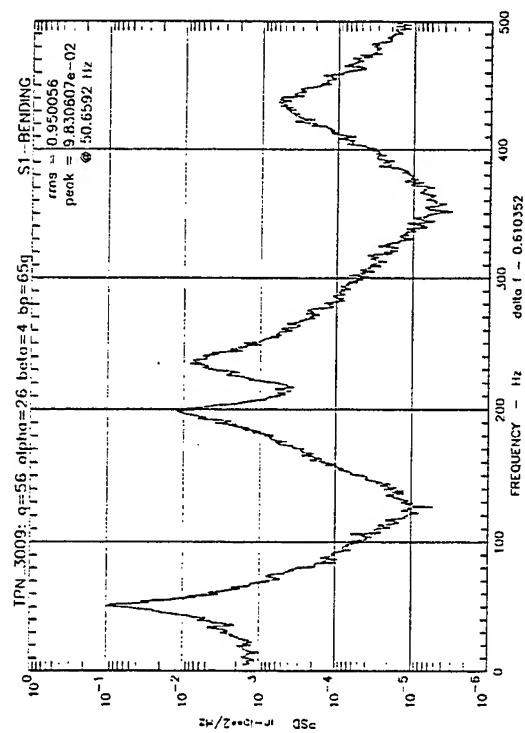
F 15 Tail Buffet Test



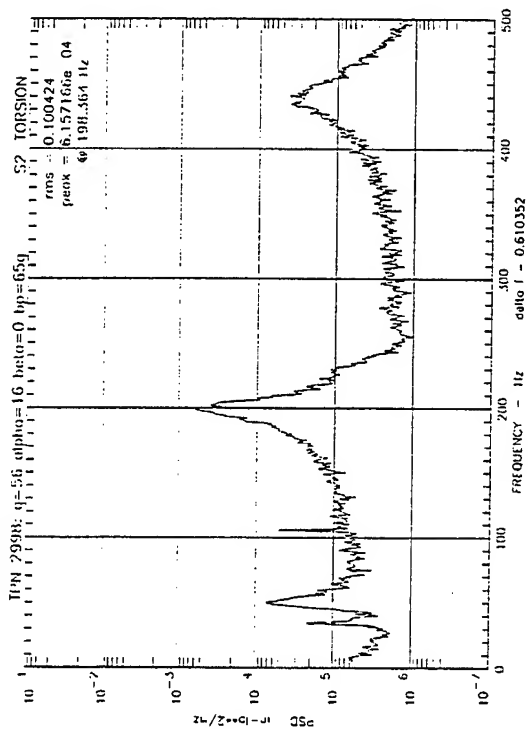
F 15 Tail Buffet Test



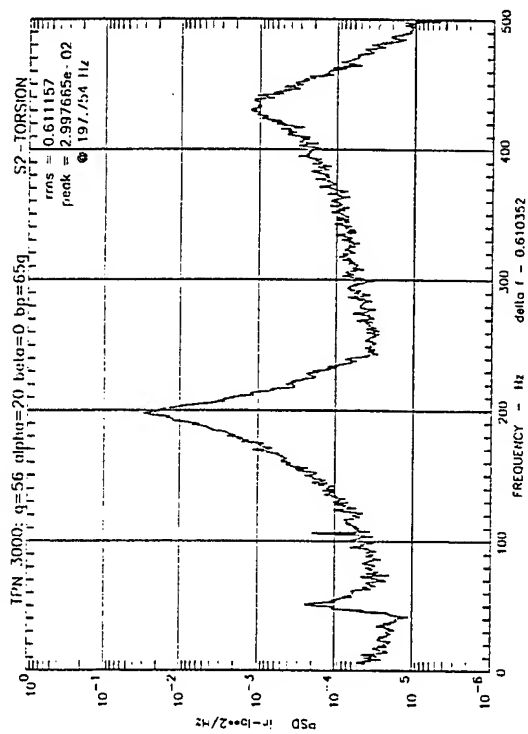
F 15 Tail Buffet Test



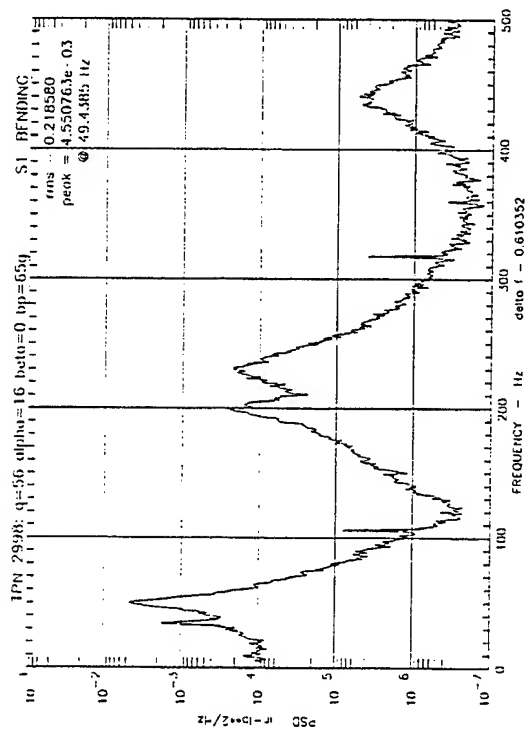
F 15 Tail Buffet Test



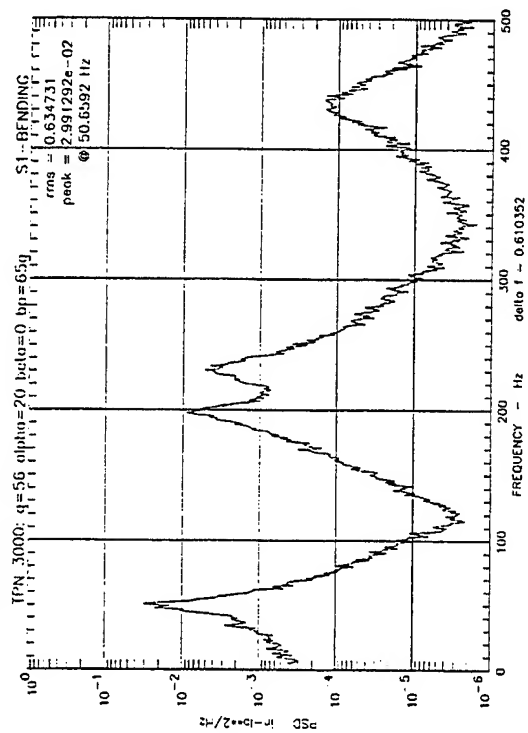
F 15 Tail Buffet Test



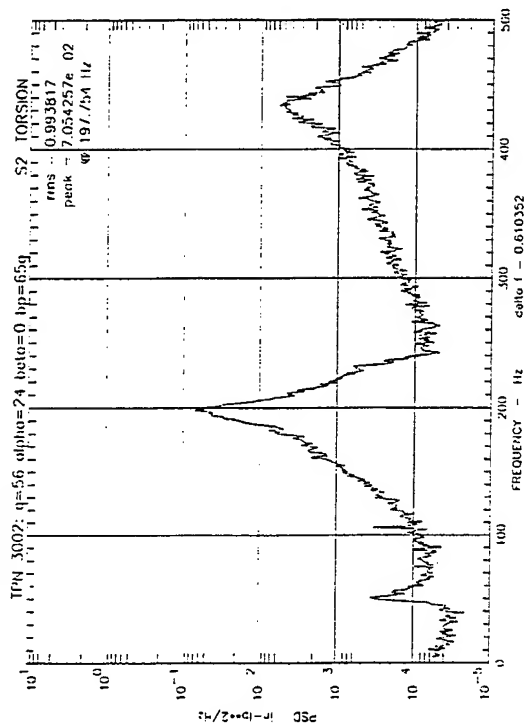
F 15 Tail Buffet Test



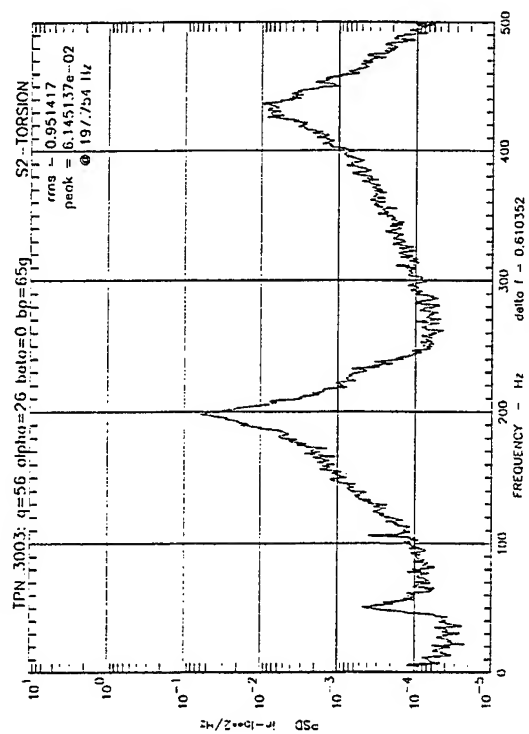
F 15 Tail Buffet Test



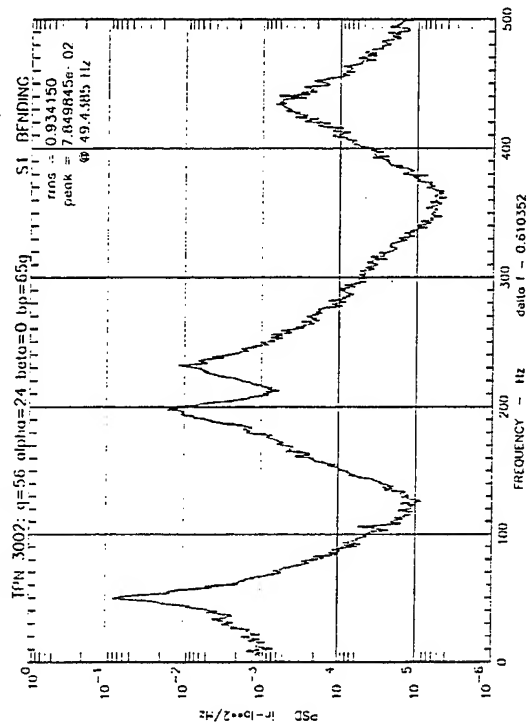
F 15 Tail Buffet Test



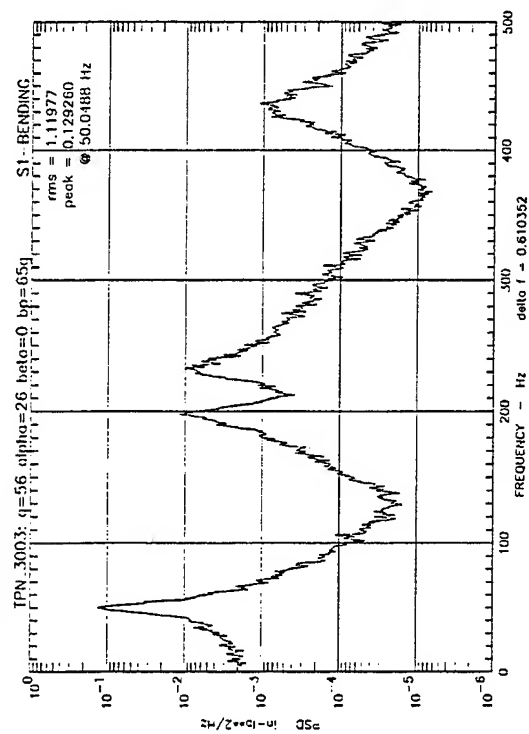
F 15 Tail Buffet Test



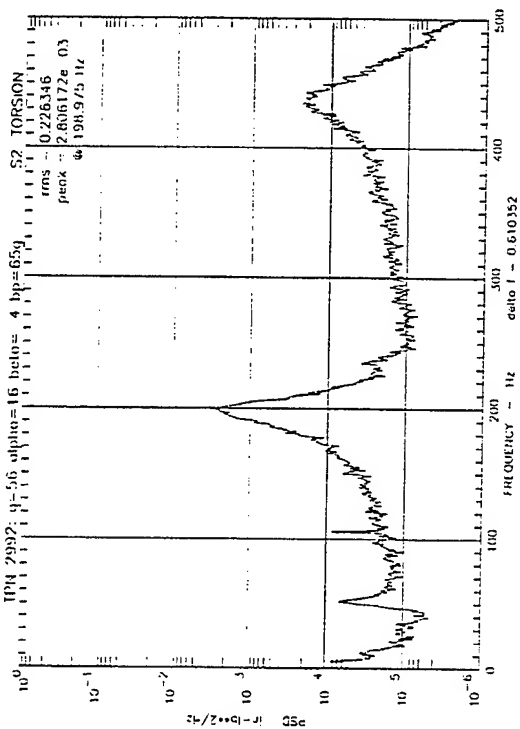
F 15 Tail Buffet Test



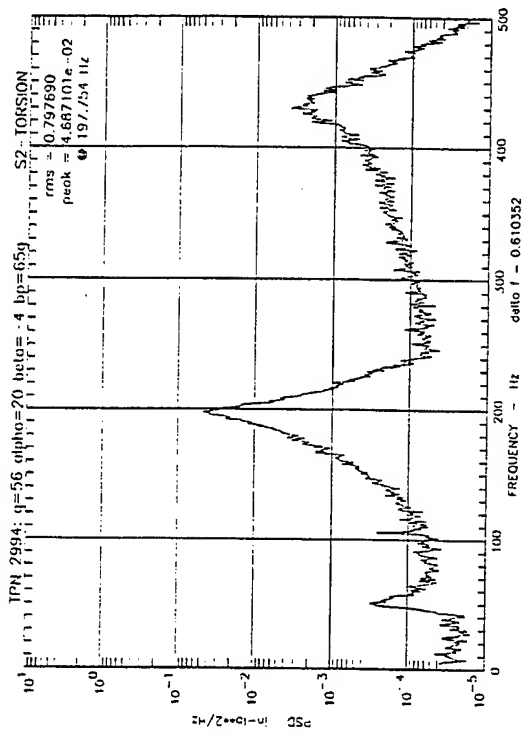
F 15 Tail Buffet Test



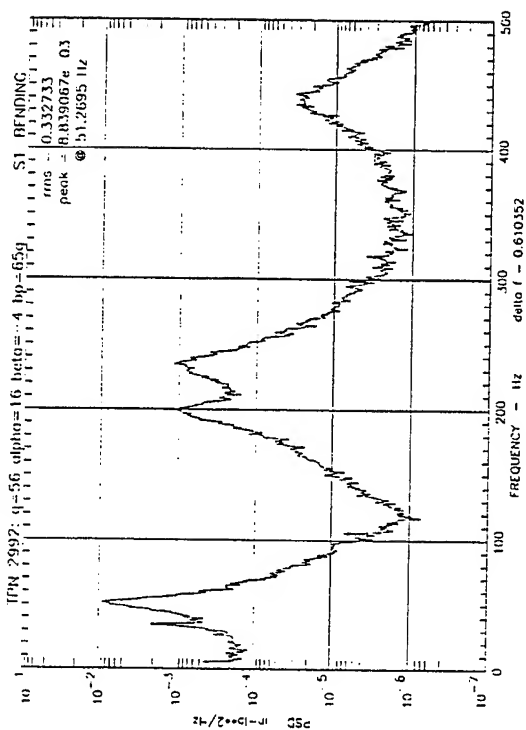
# F-15 Tail Buffet Test



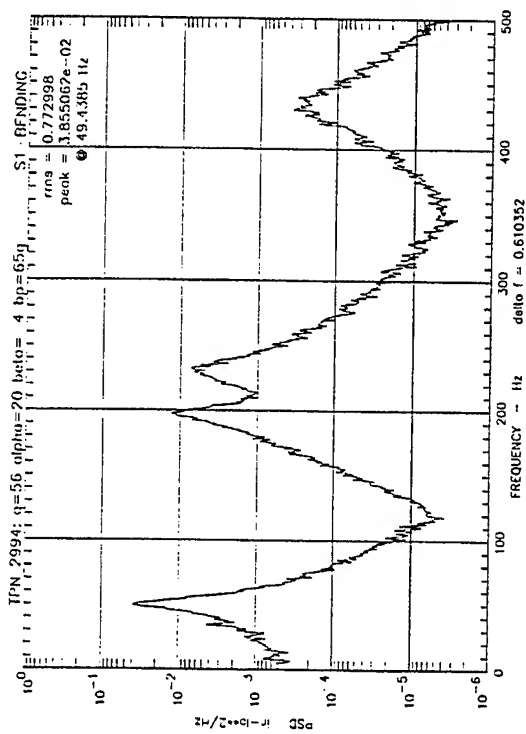
# F-15 Tail Buffet Test



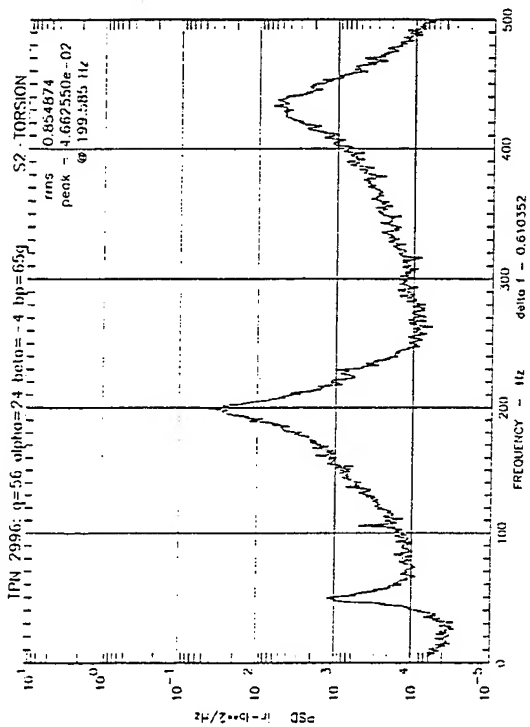
# F-15 Tail Buffet Test



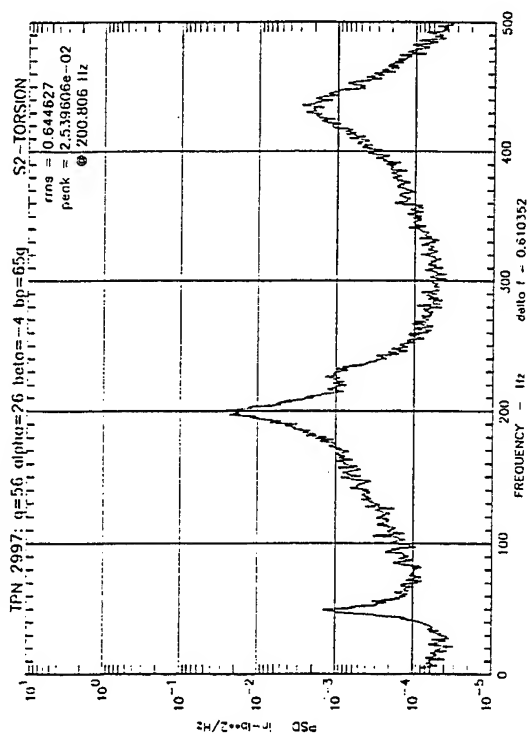
# F-15 Tail Buffet Test



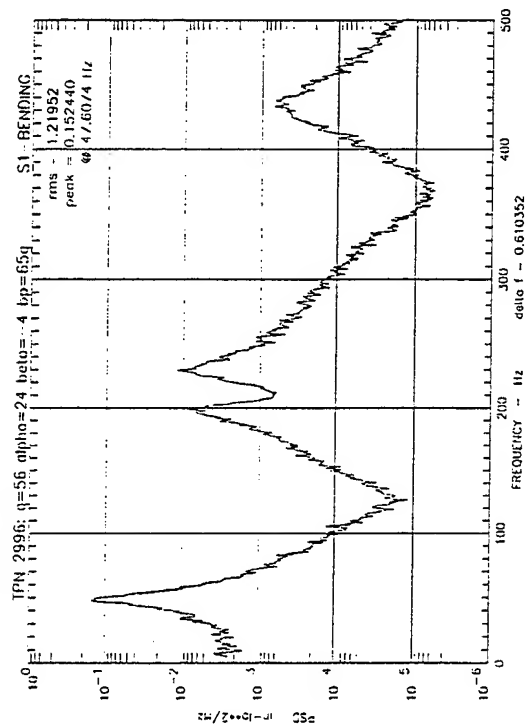
F 15 Tail Buffet Test



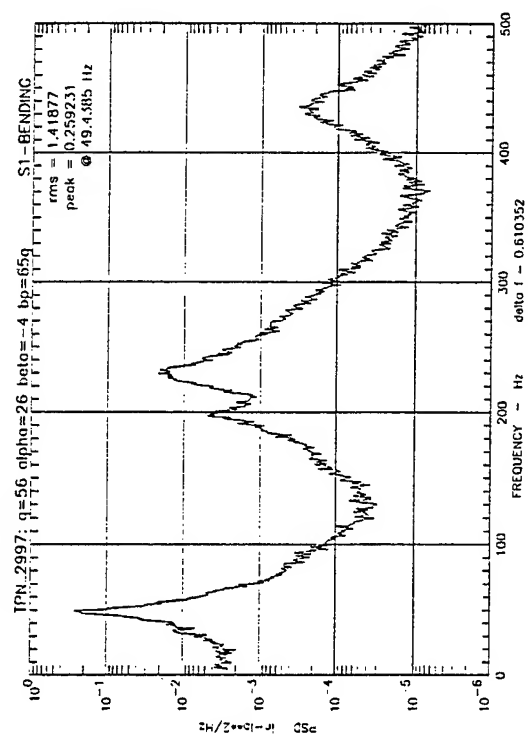
F-15 Tail Buffet Test



F 15 Tail Buffet Test

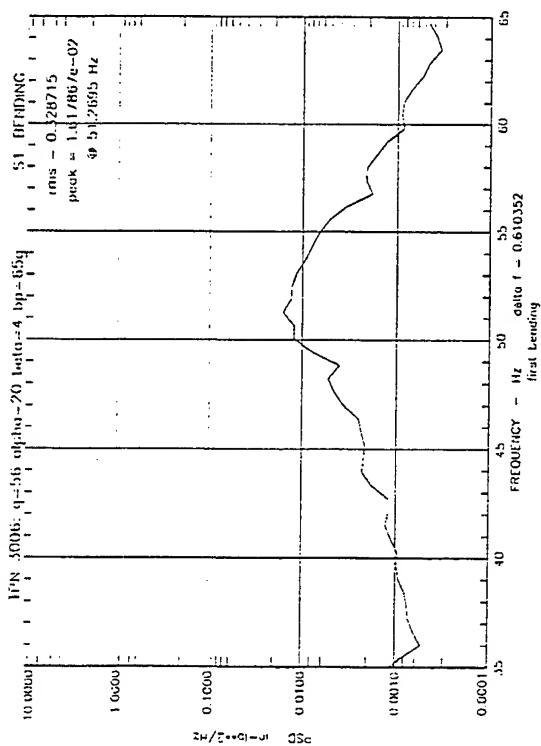


F-15 Tail Buffet Test

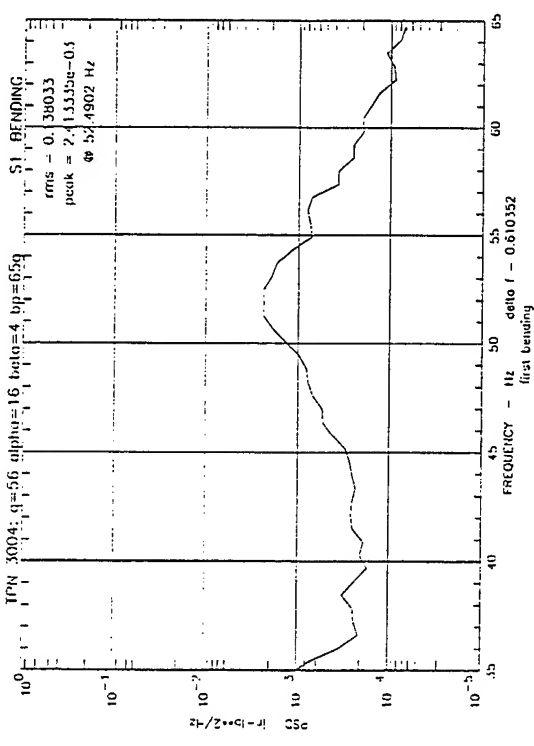




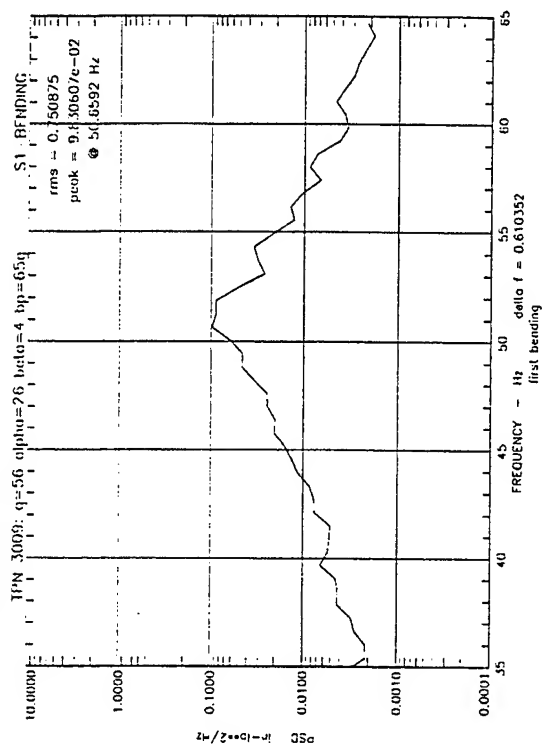
F-15 Tail Buffet Test



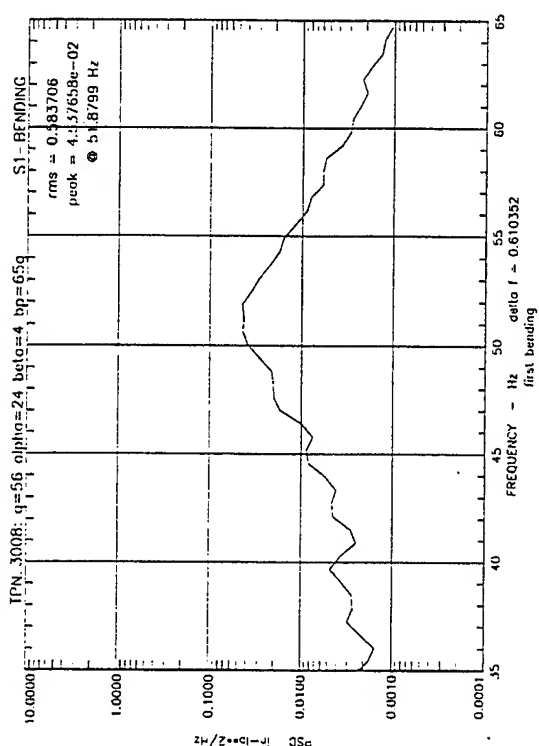
F-15 Tail Buffet Test

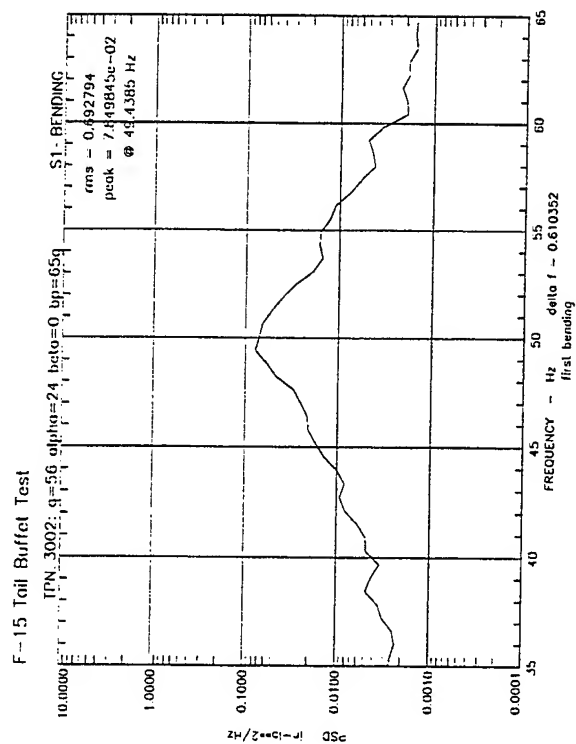
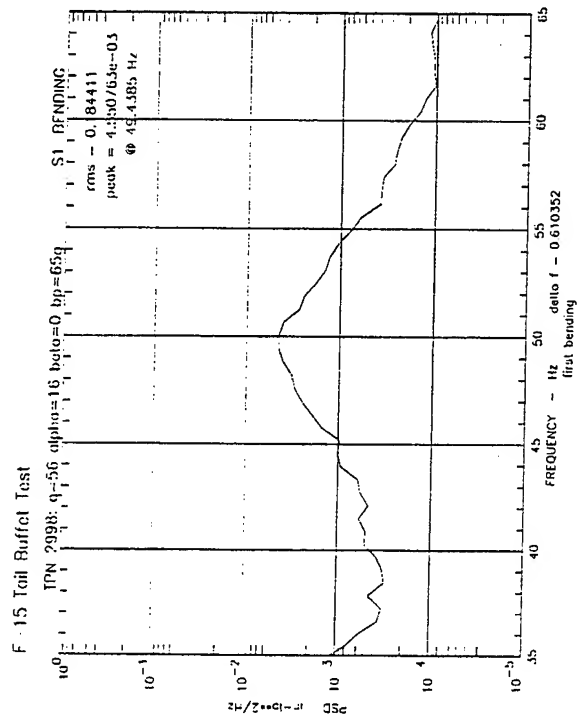
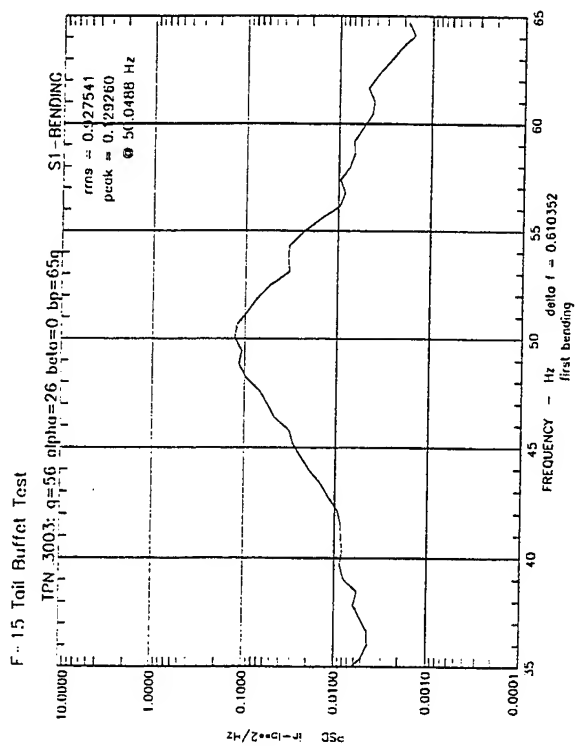
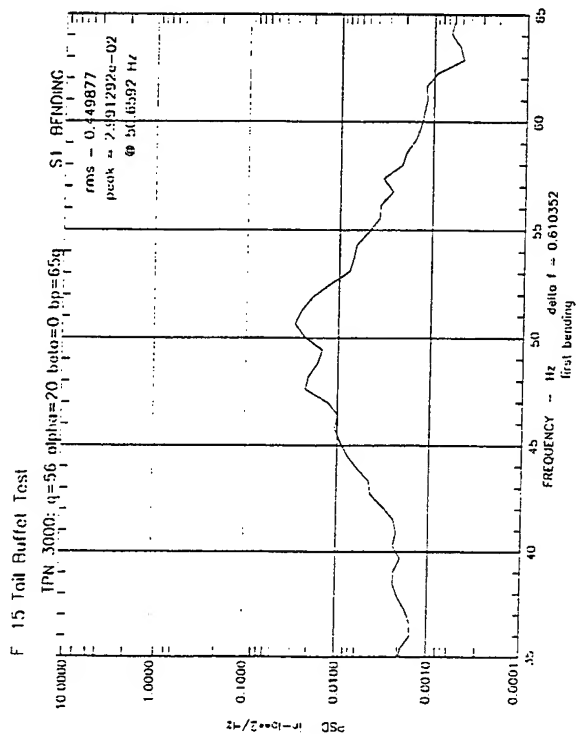


F-15 Tail Buffet Test

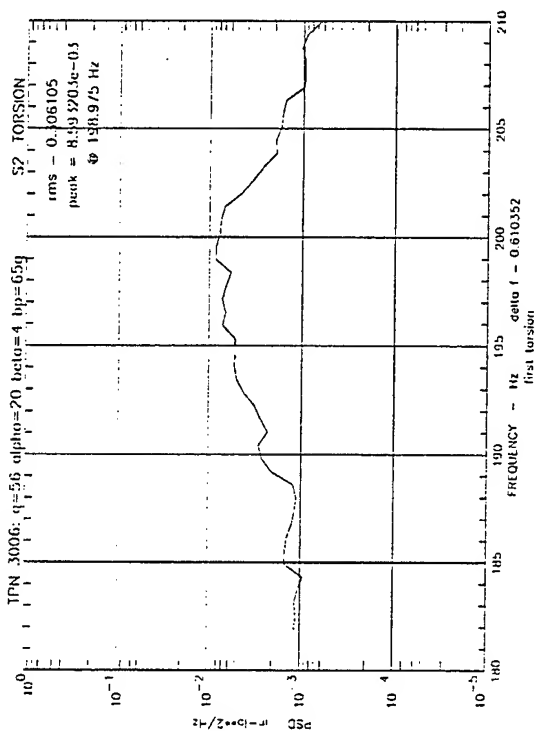


F-15 Tail Buffet Test

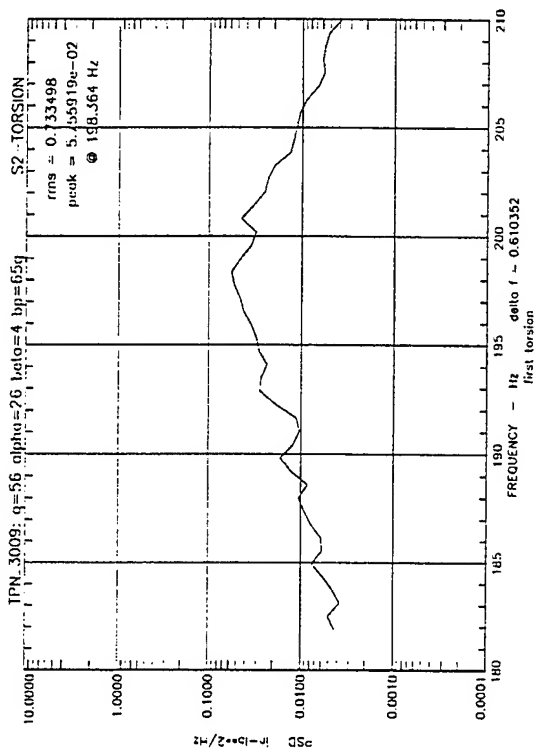




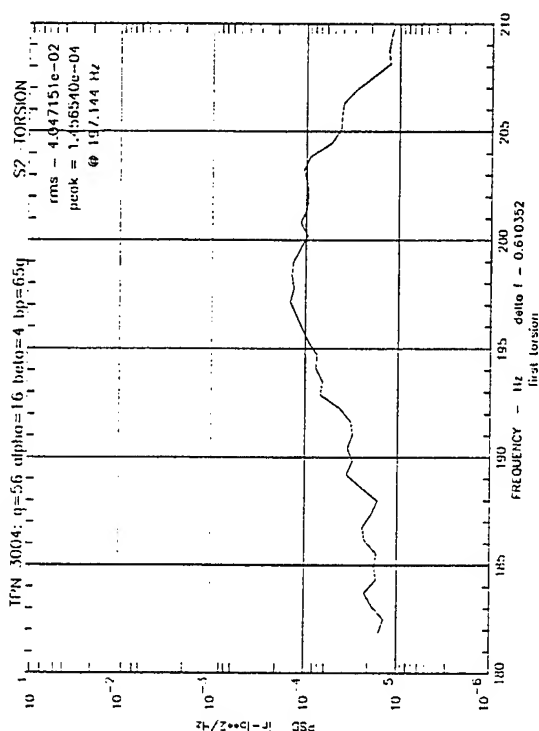
F-15 Tail Buffet Test



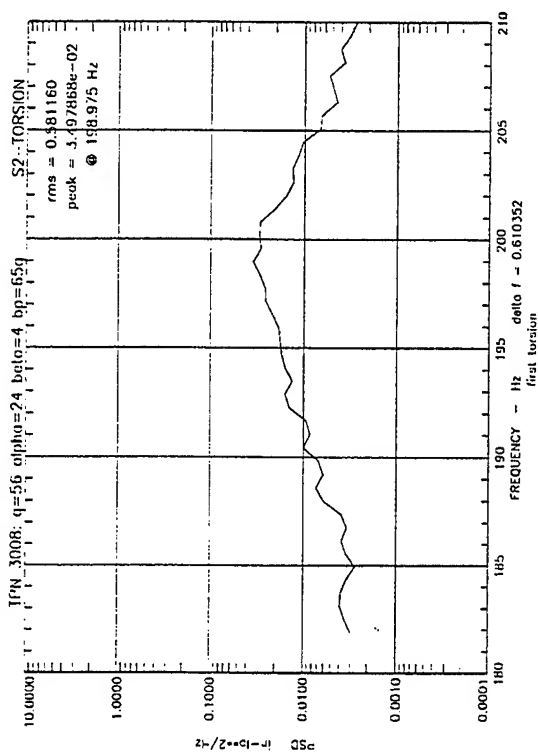
F-15 Tail Buffet Test



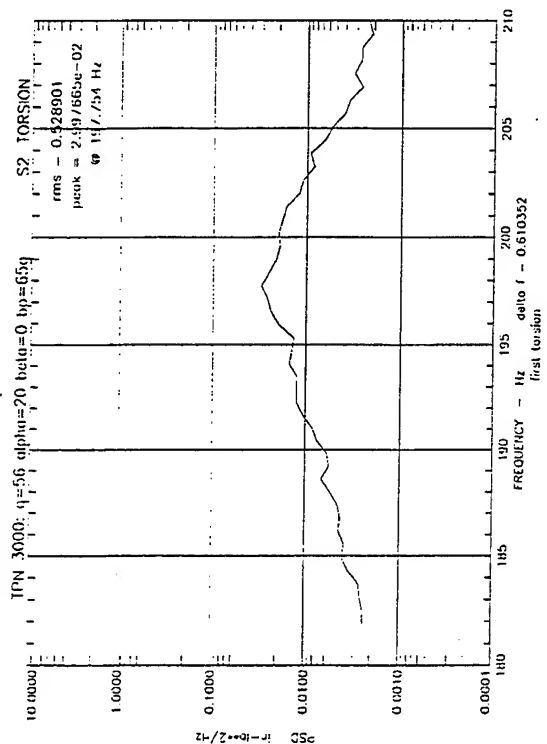
F-15 Tail Buffet Test



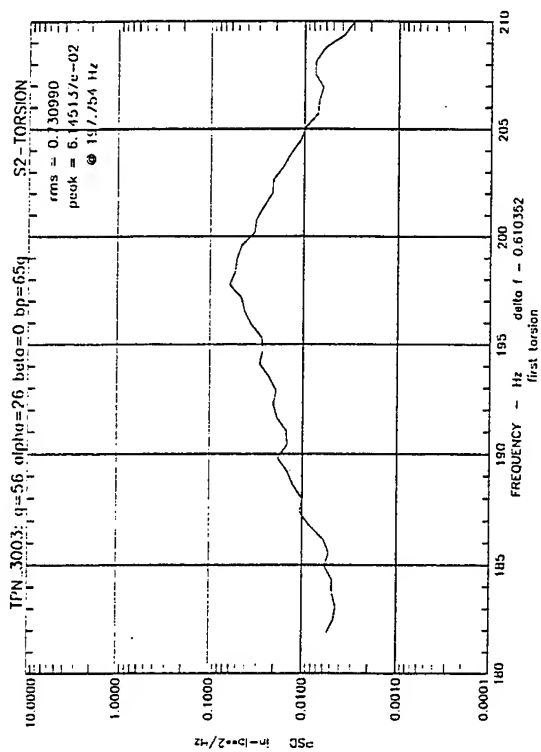
F-15 Tail Buffet Test



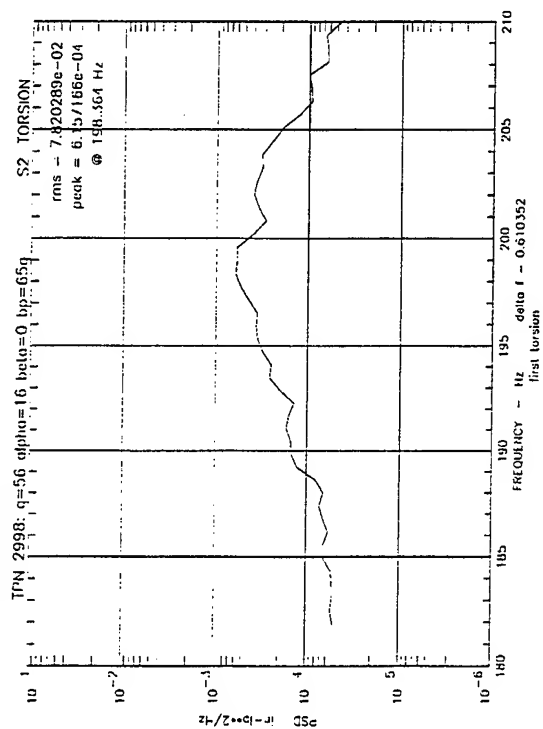
F-15 Tail Buffet Test



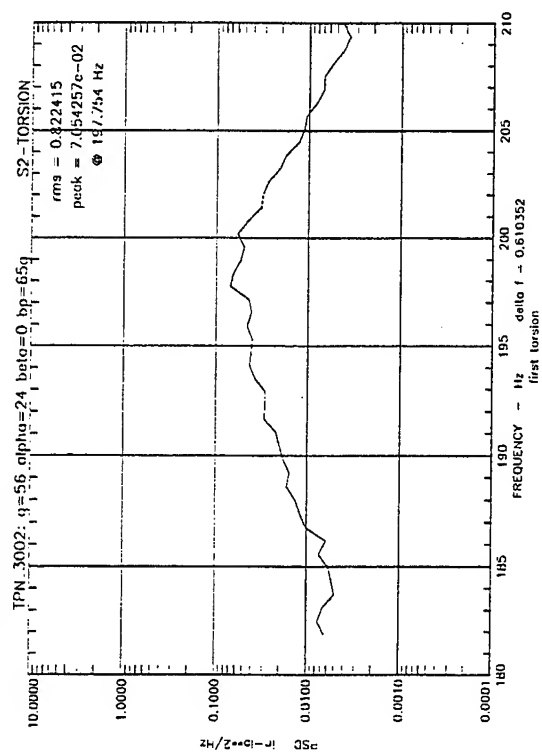
F-15 Tail Buffet Test



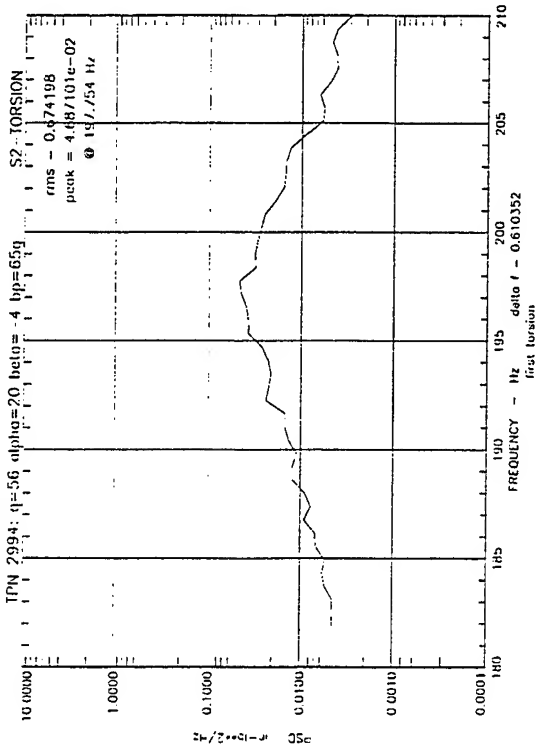
F-15 Tail Buffet Test



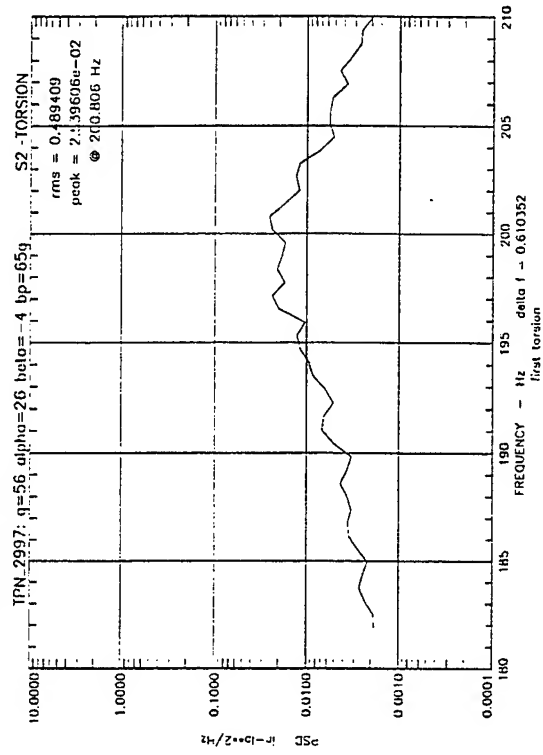
F-15 Tail Buffet Test



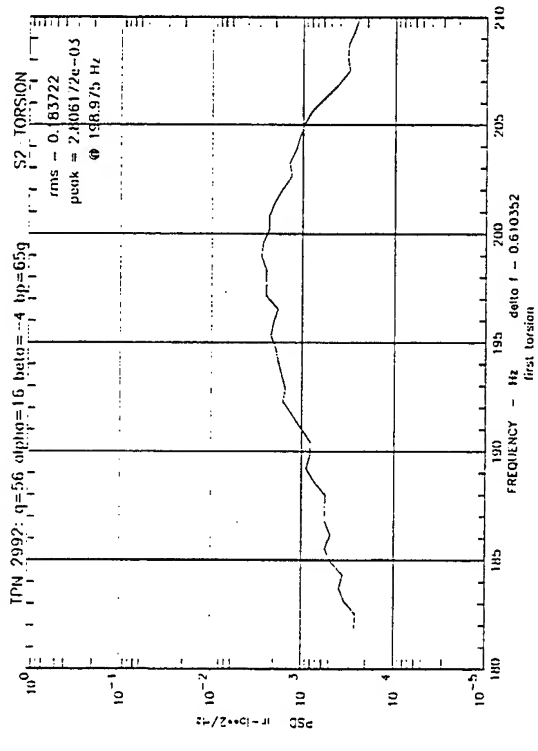
F 15 Tail Buffet Test



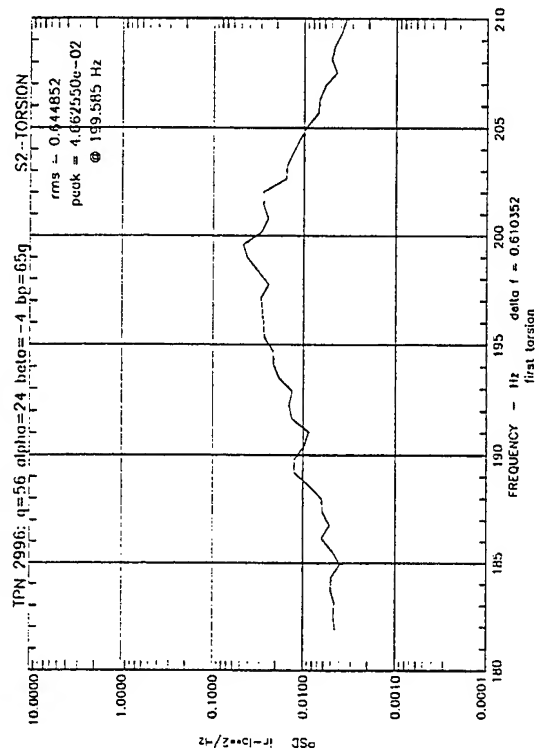
F 15 Tail Buffet Test



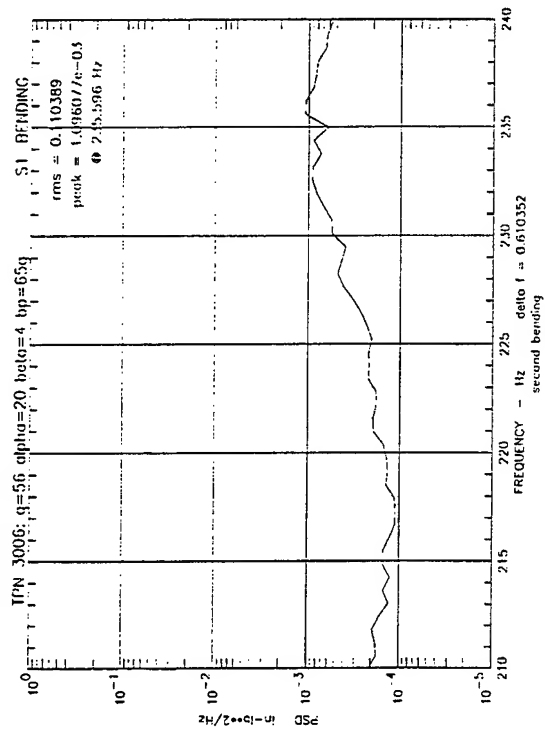
F 15 Tail Buffet Test



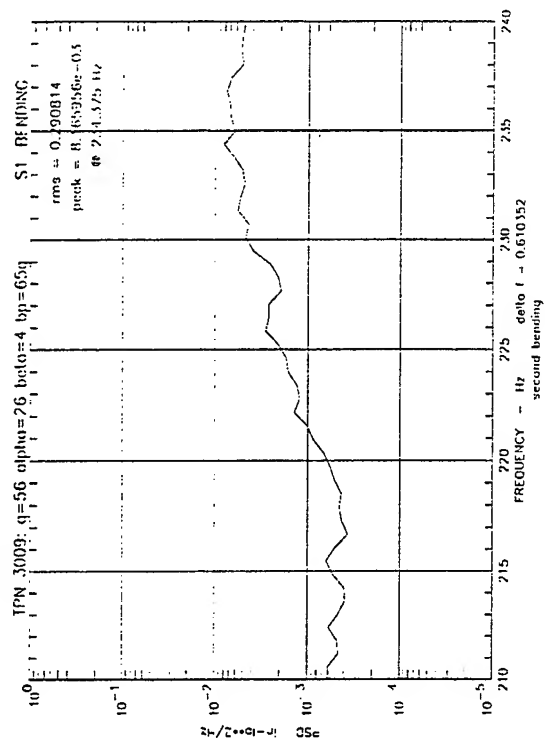
F 15 Tail Buffet Test



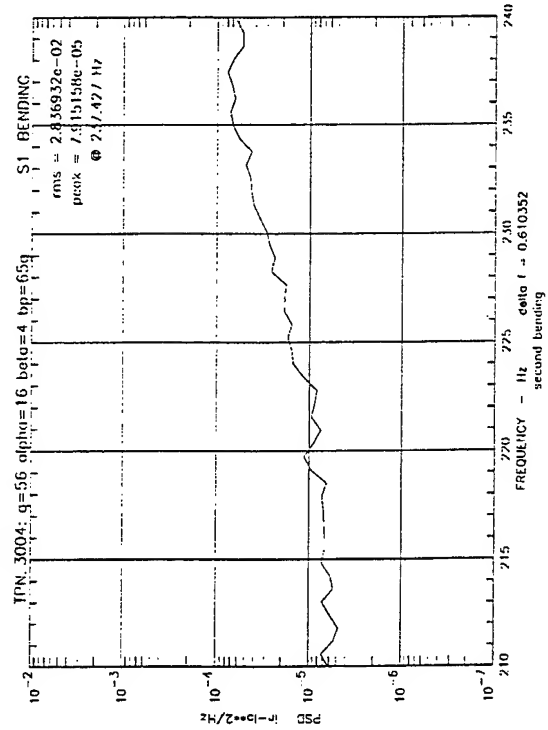
F-15 Tail Buffet Test



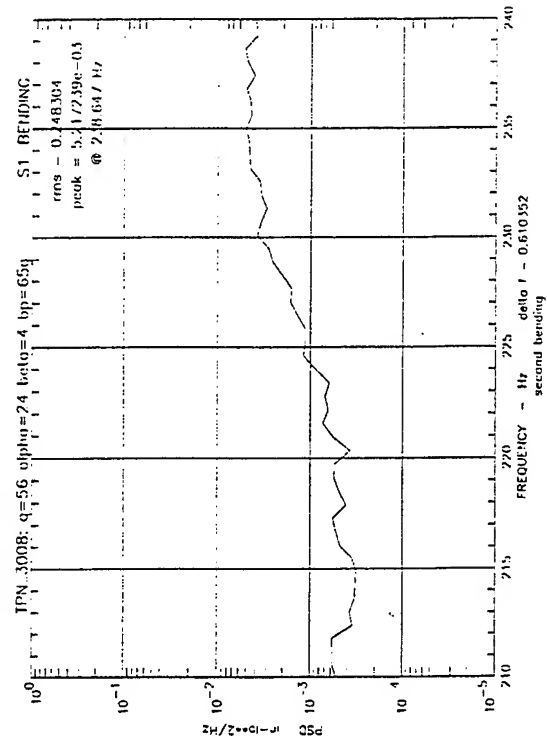
F-15 Tail Buffet Test

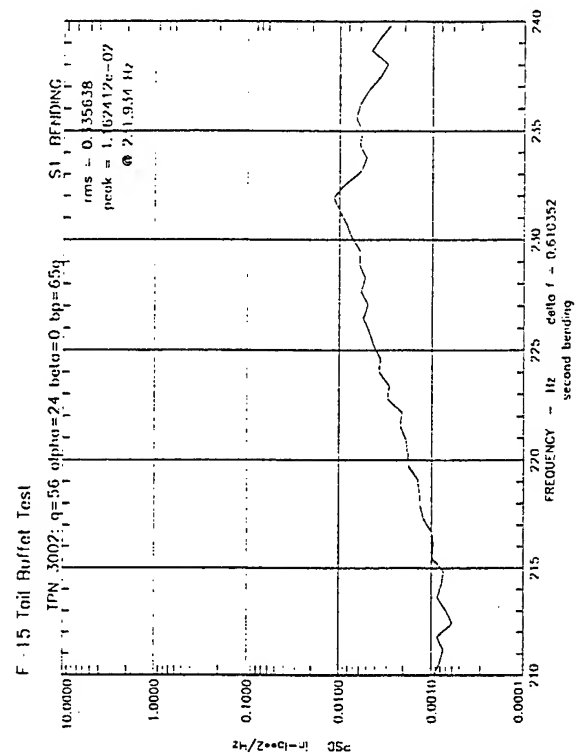
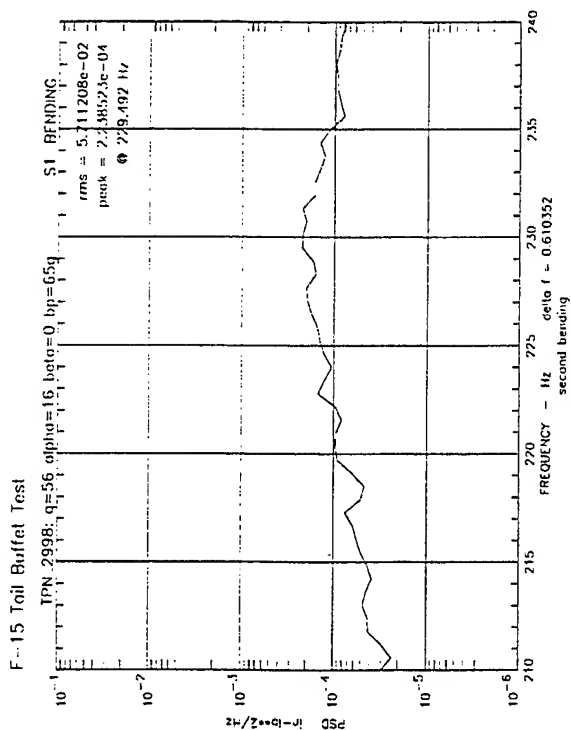
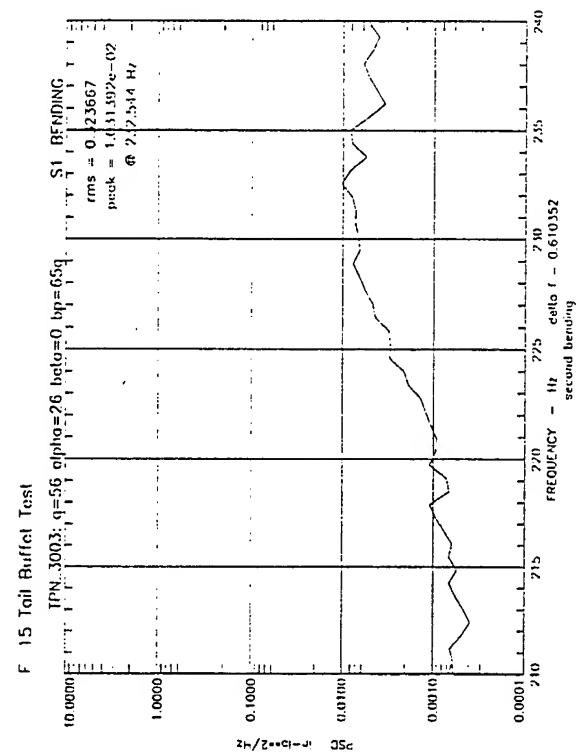
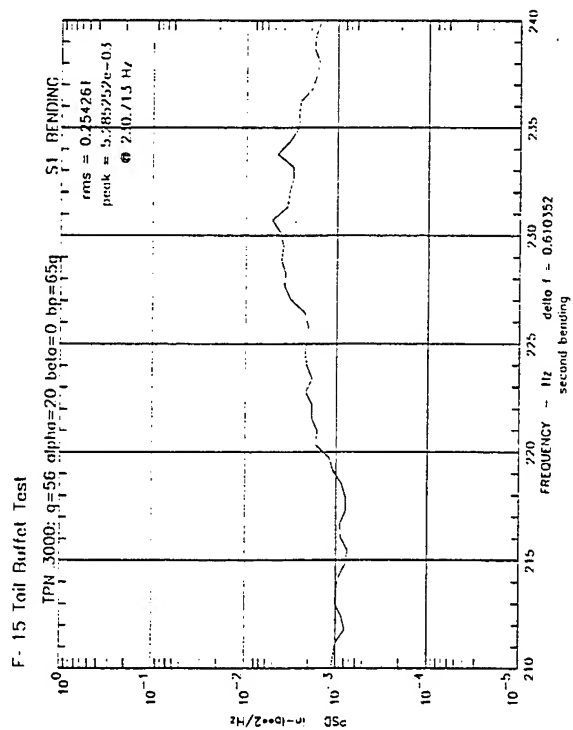


F-15 Tail Buffet Test

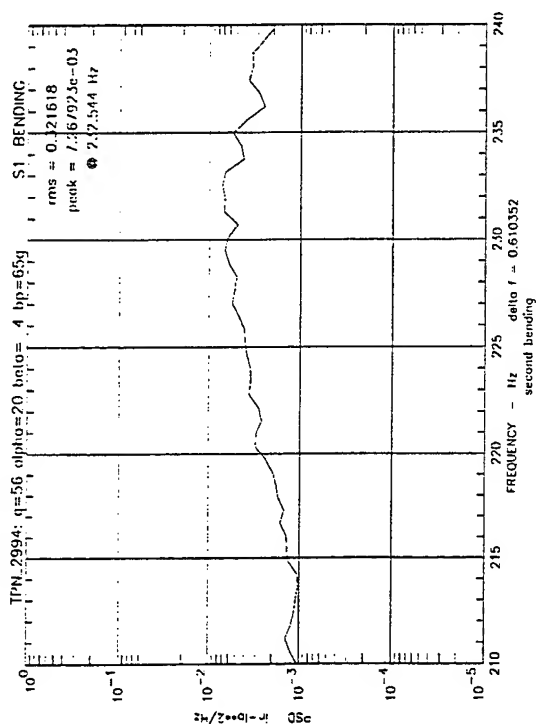


F-15 Tail Buffet Test

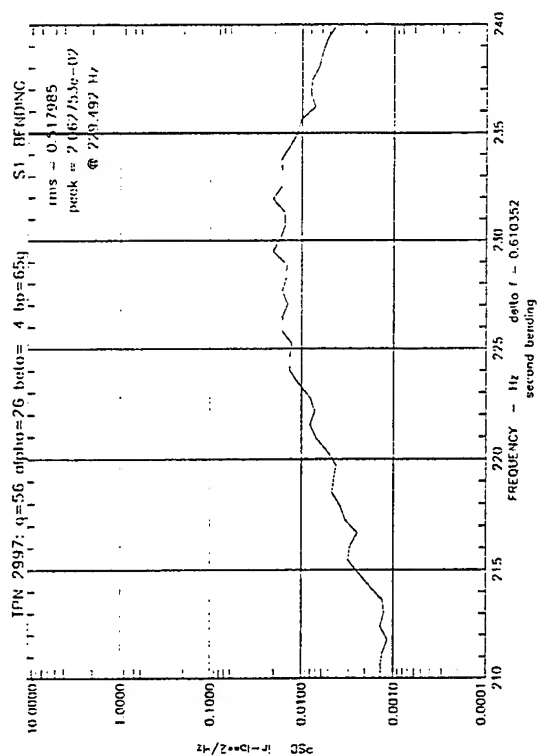




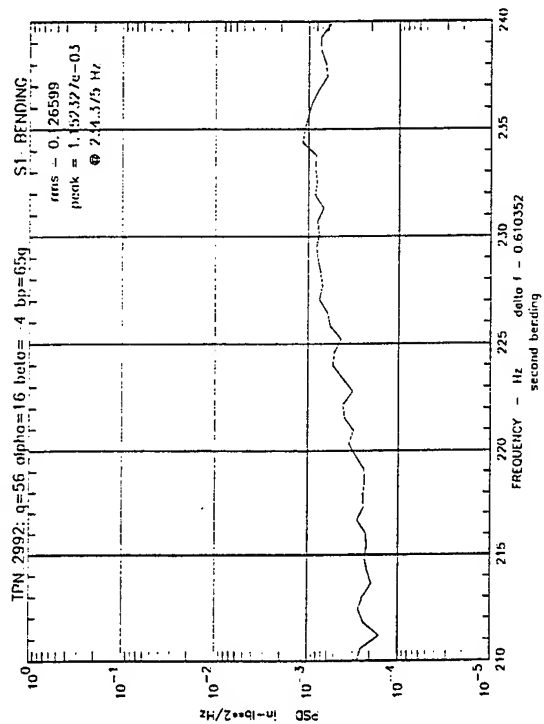
F-15 Tail Buffet Test



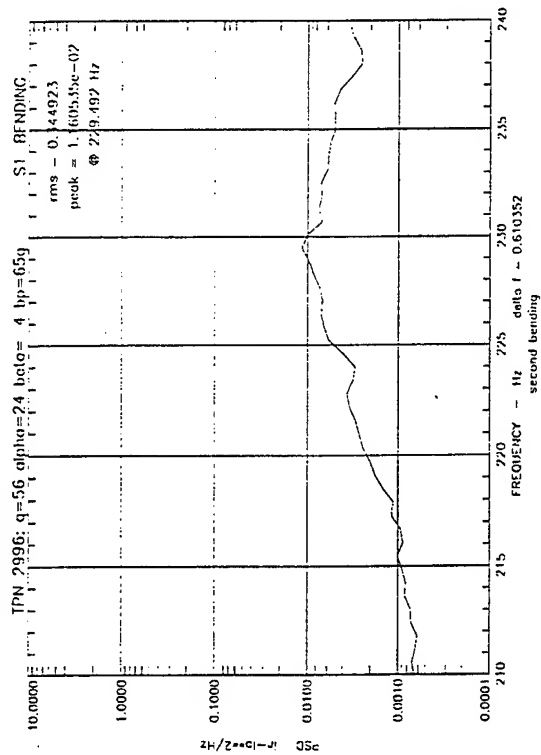
F-15 Tail Buffet Test



F-15 Tail Buffet Test



F-15 Tail Buffet Test





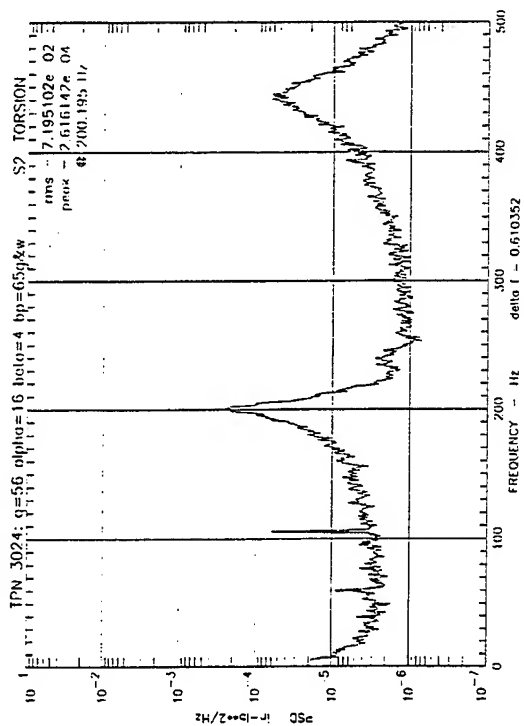
**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION**

**PSD GRAPHS**

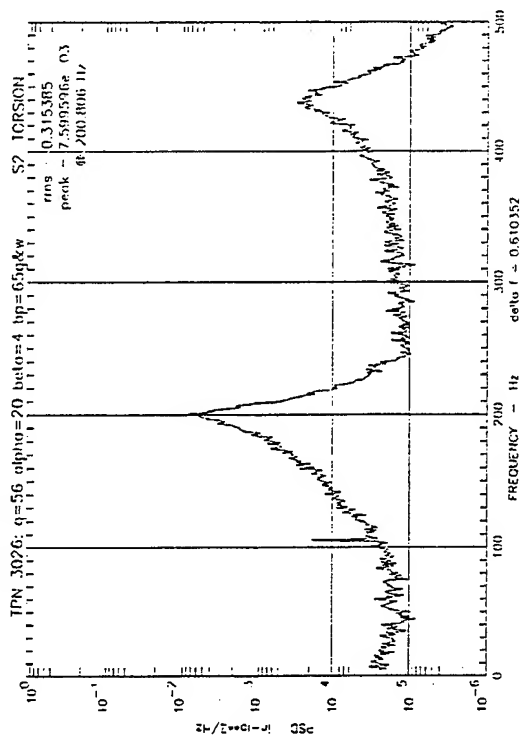
**Q= 56 PSF**

**2.1.1.3 GBP = 65 psi,WBP = 65 psi BETA= 0, + 4, - 4, ALPHA= 0.....32 Deg**

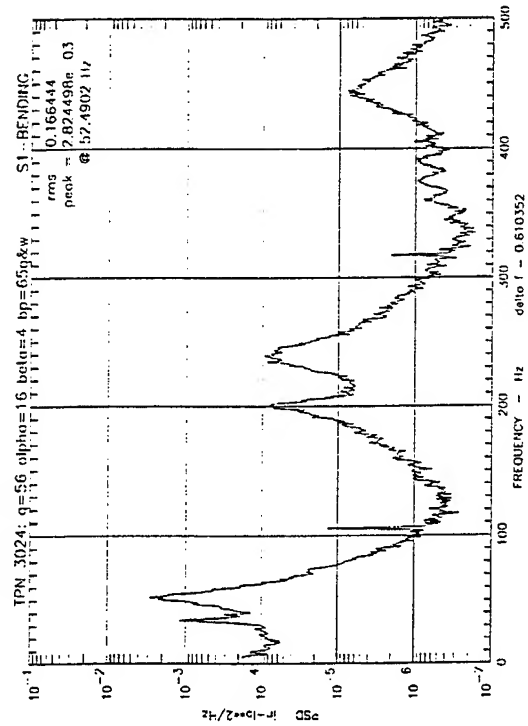
F-15 Tail Buffet Test



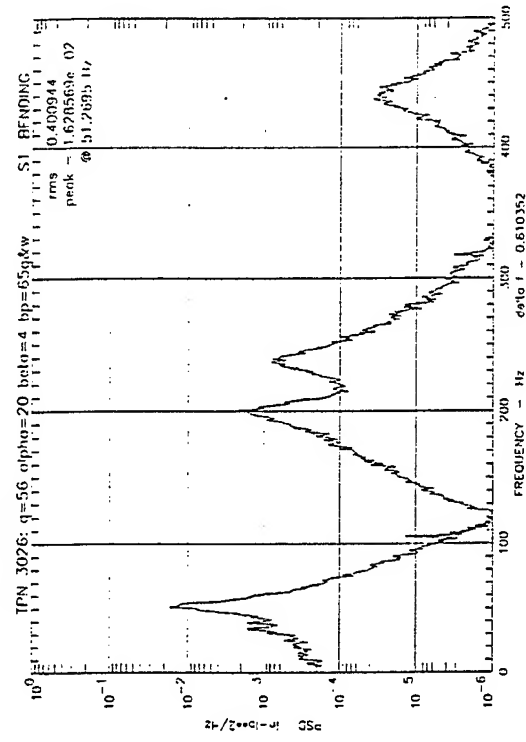
F-15 Tail Buffet Test

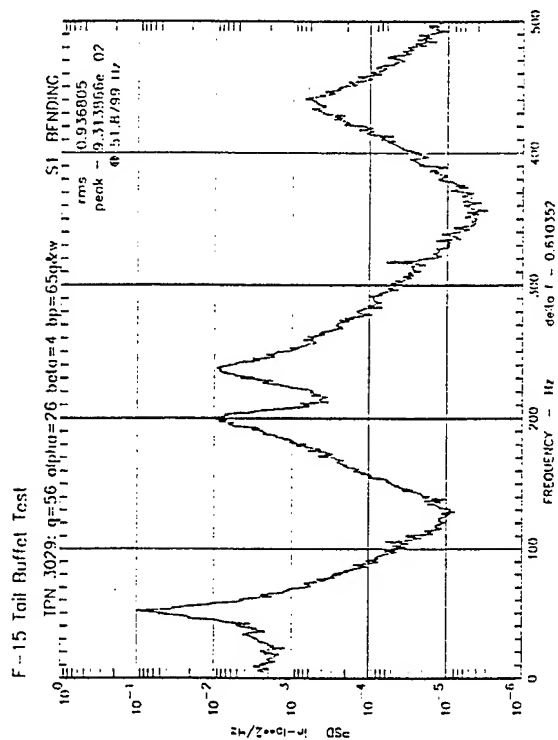
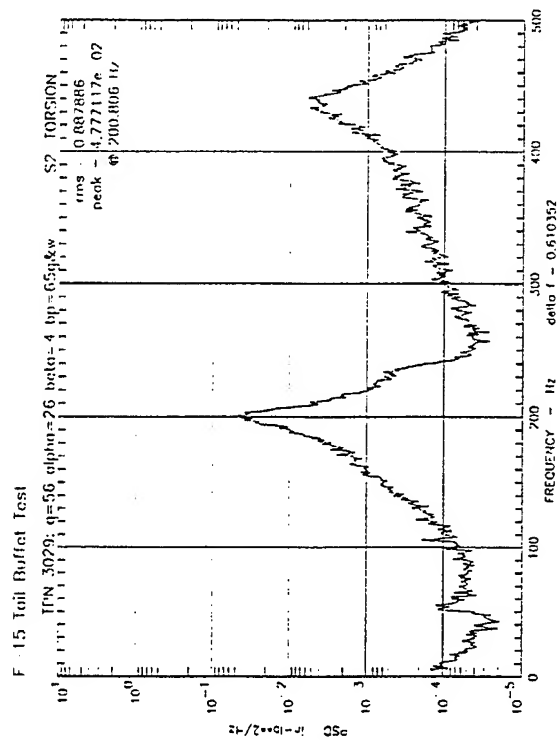
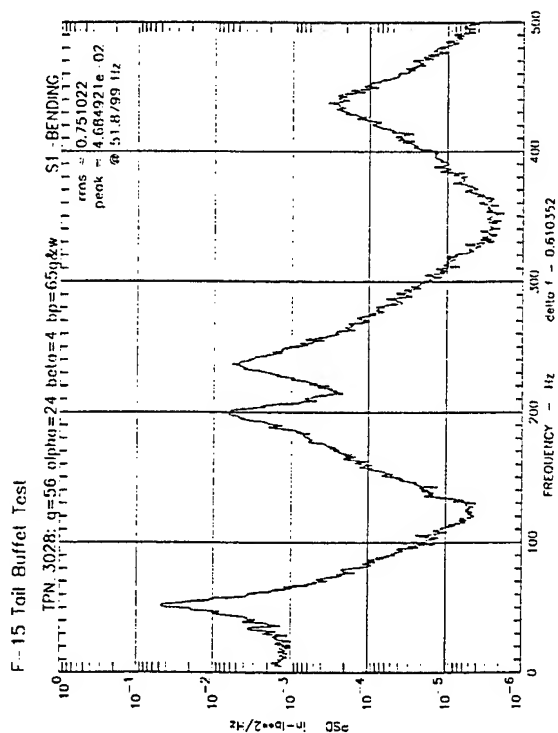
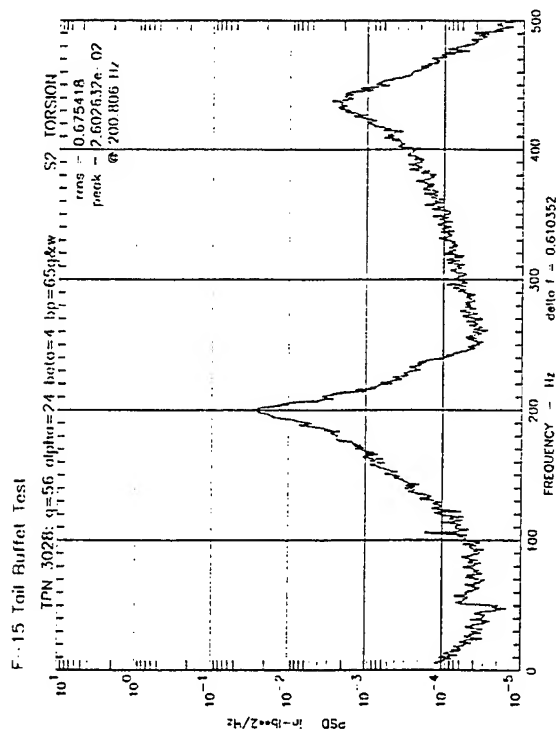


F-15 Tail Buffet Test

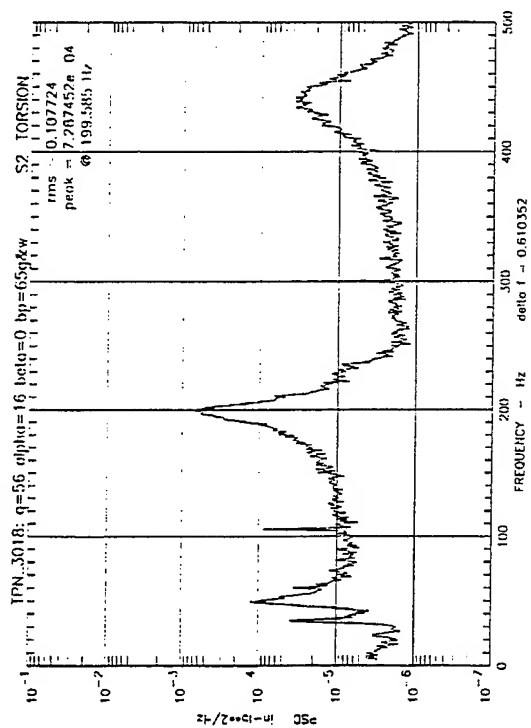


F-15 Tail Buffet Test

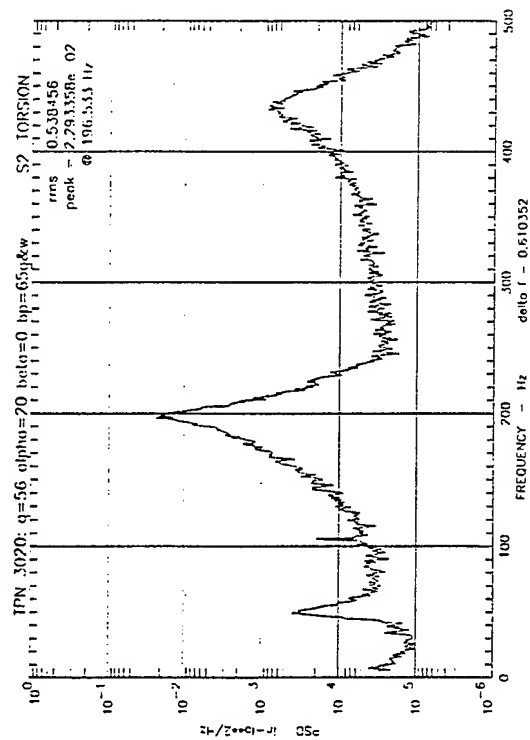




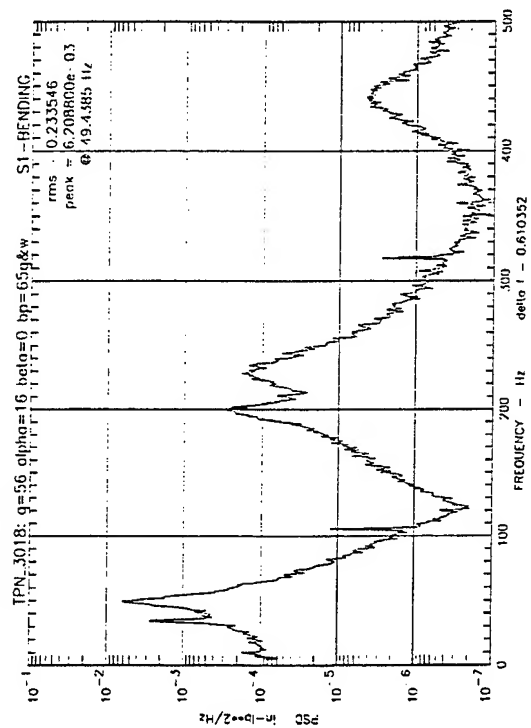
F-15 Tail Buffet Test



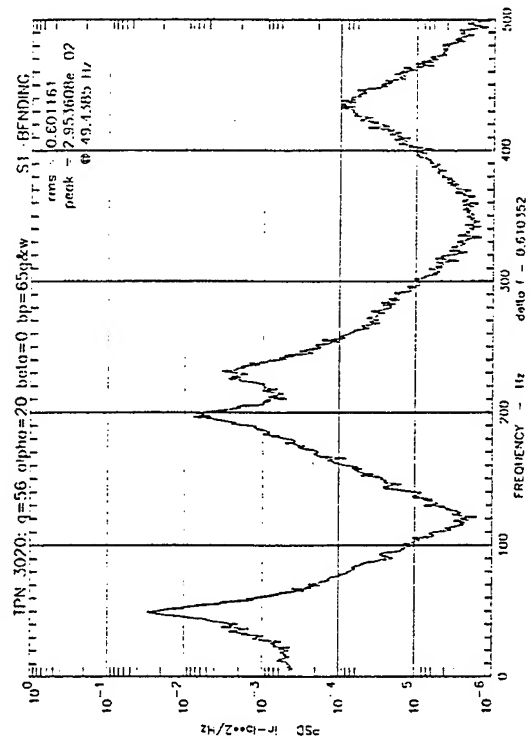
F-15 Tail Buffet Test



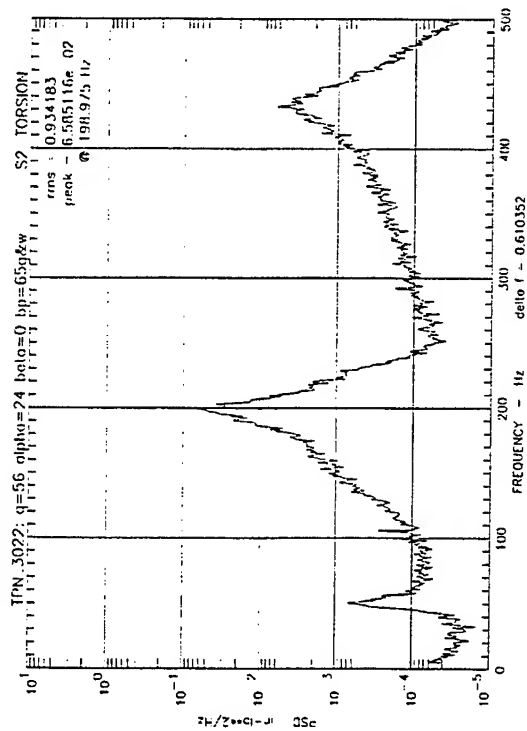
F-15 Tail Buffet Test



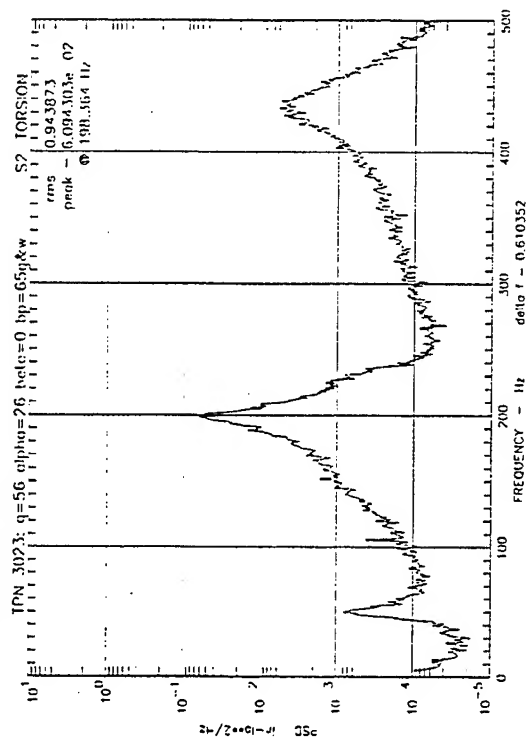
F-15 Tail Buffet Test



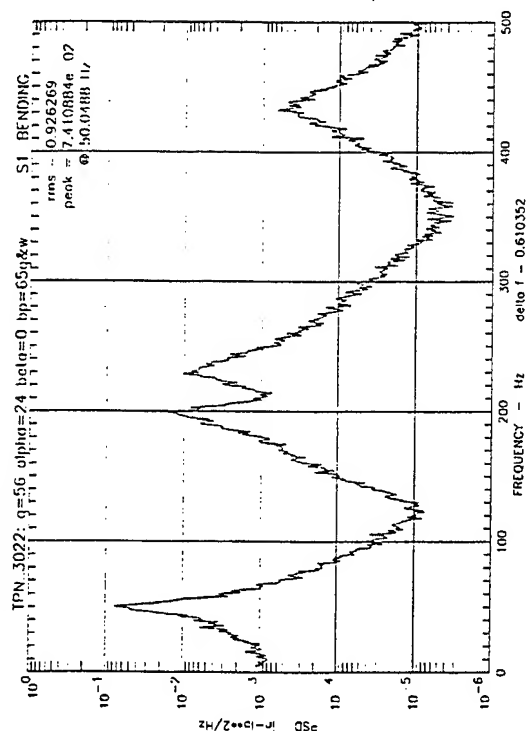
F-15 Tail Buffet Test



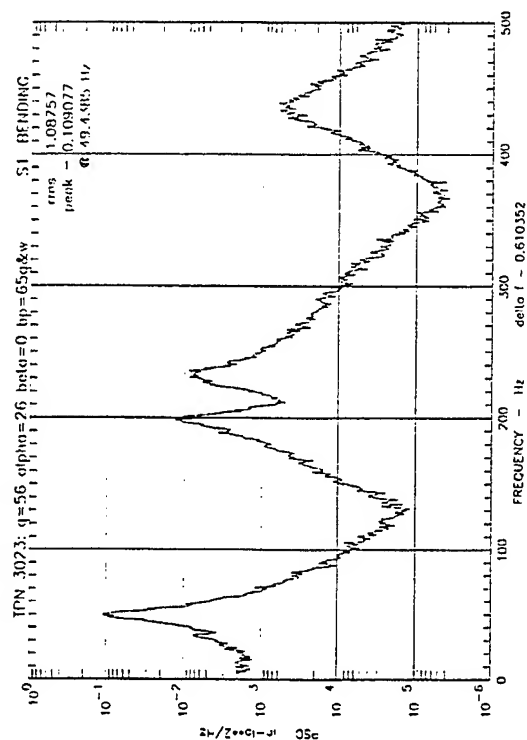
F-15 Tail Buffet Test



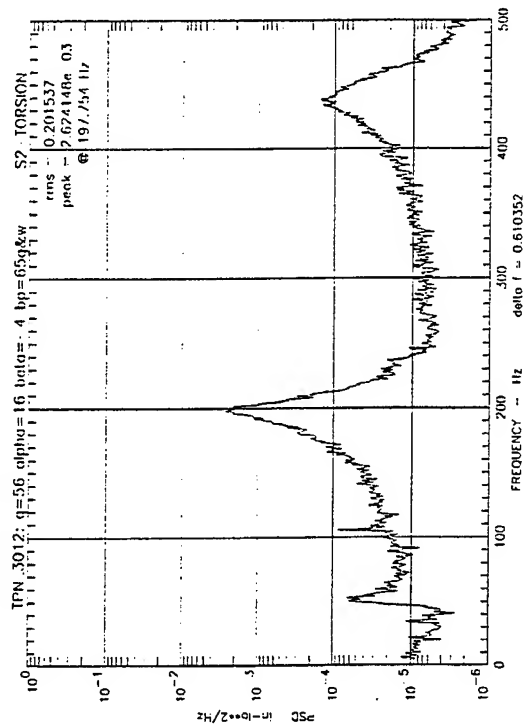
F-15 Tail Buffet Test



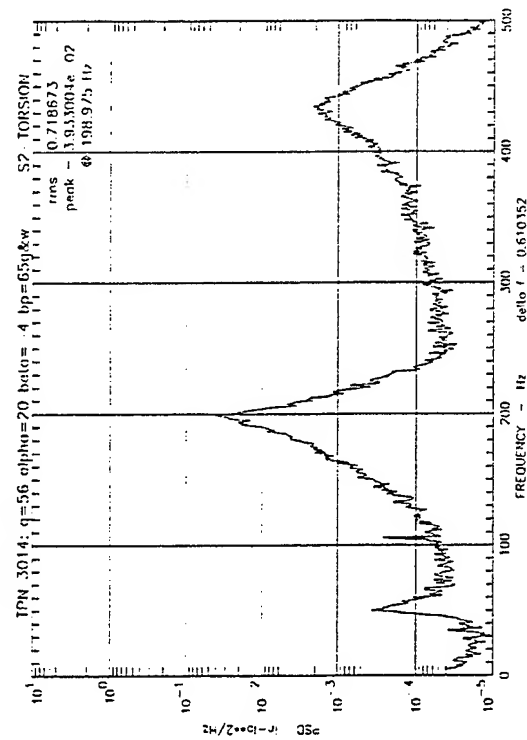
F-15 Tail Buffet Test



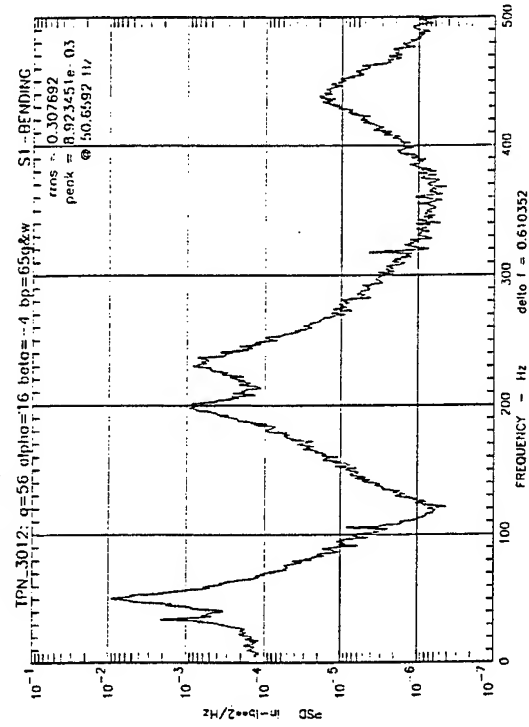
F-15 Tail Buffet Test



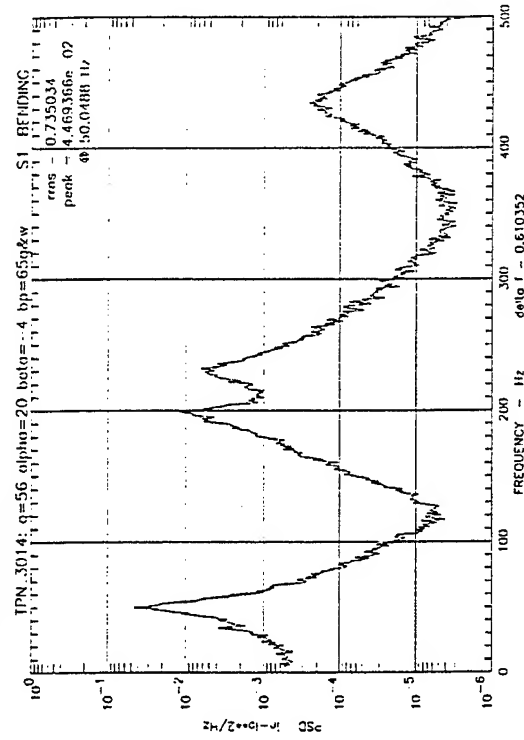
F-15 Tail Buffet Test



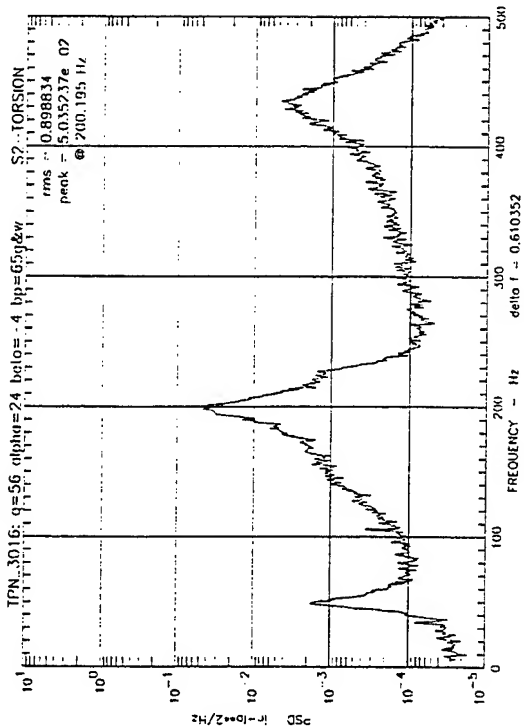
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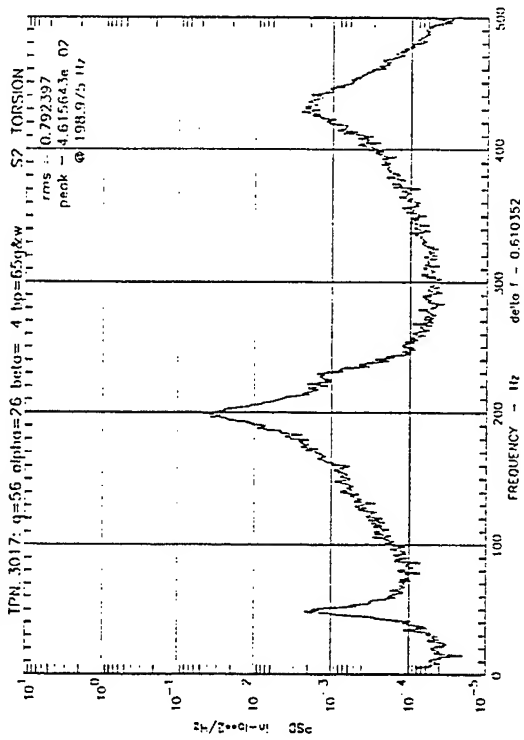
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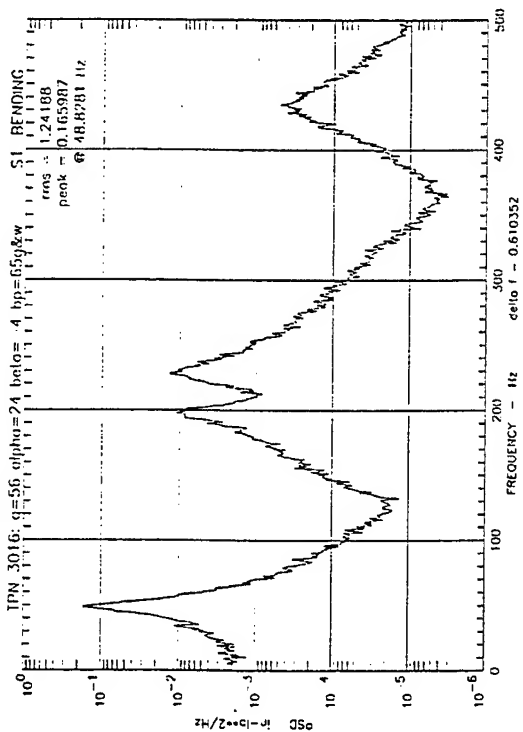
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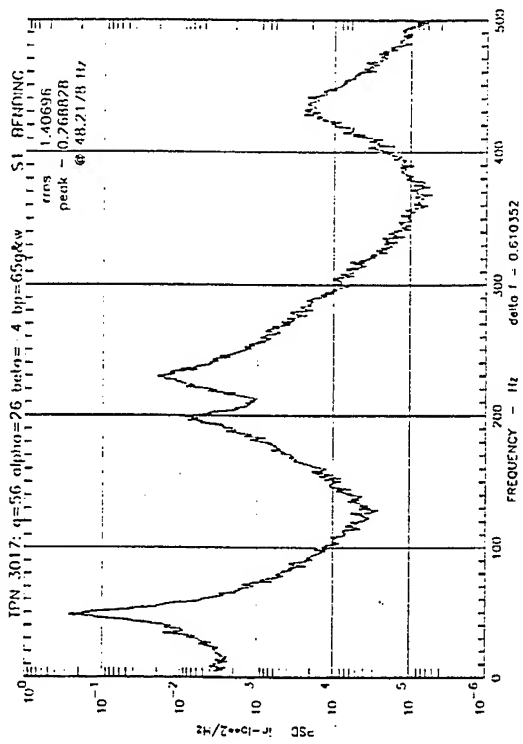
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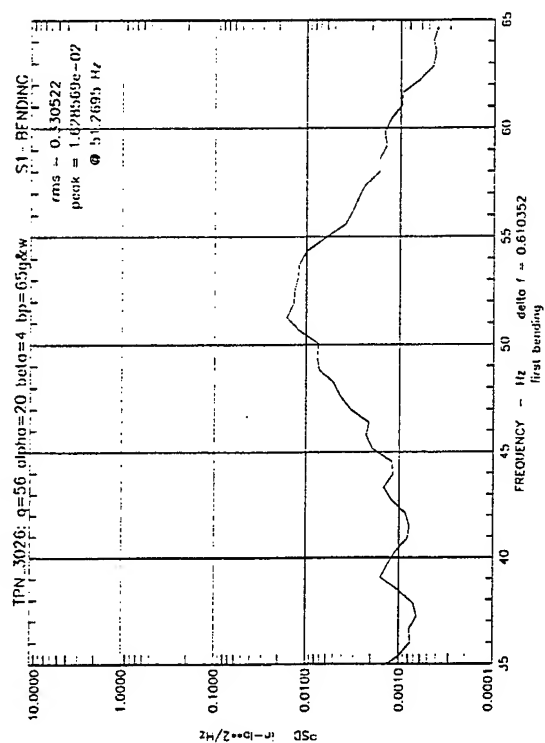
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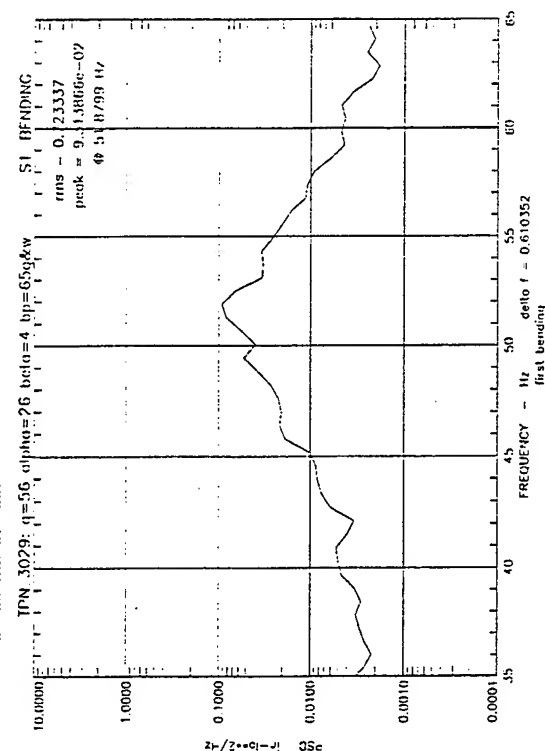
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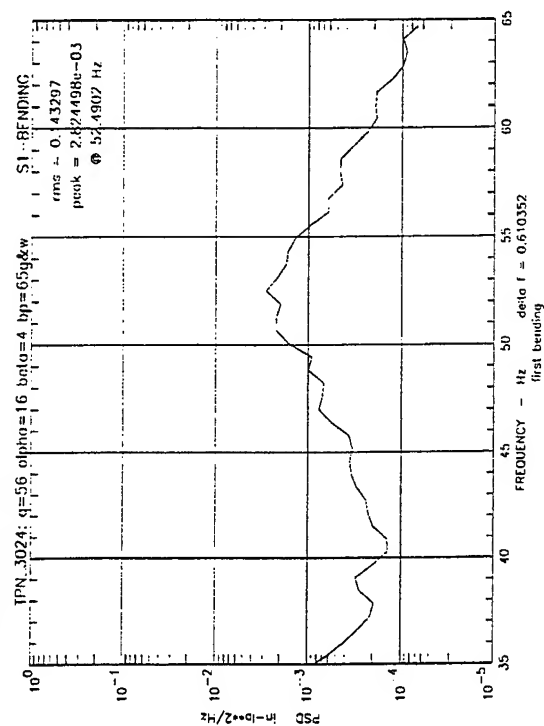
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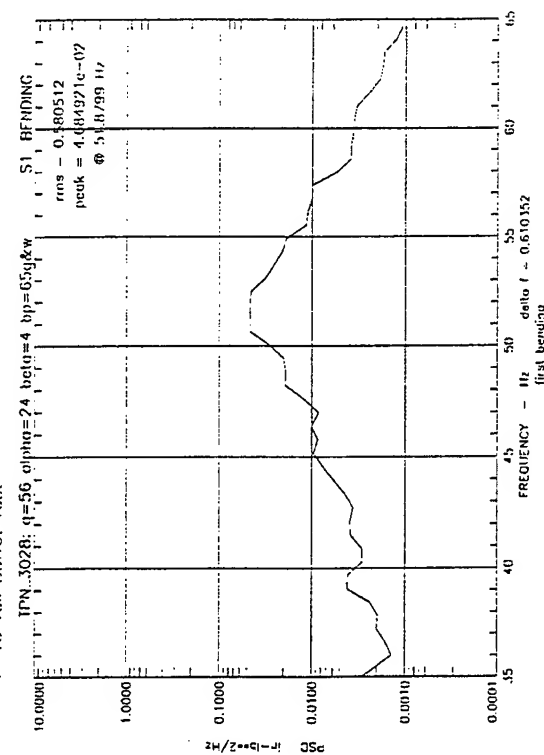
F-15 Tail Buffet Test



F-15 Tail Buffet Test

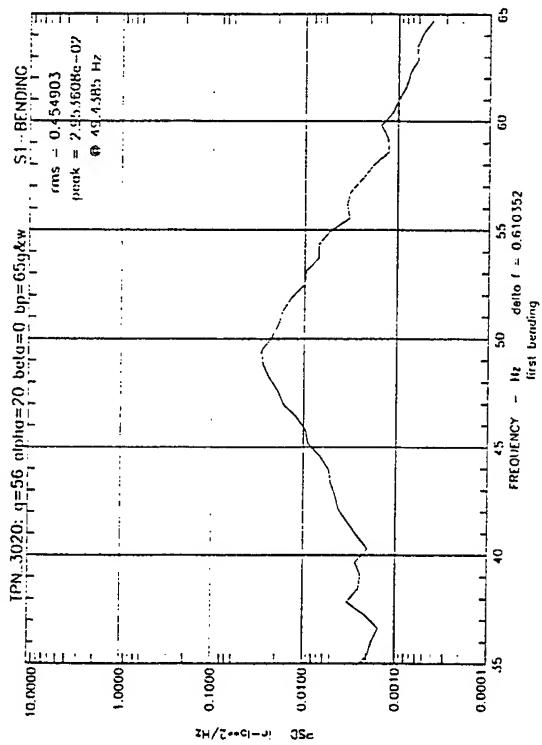


F-15 Tail Buffet Test

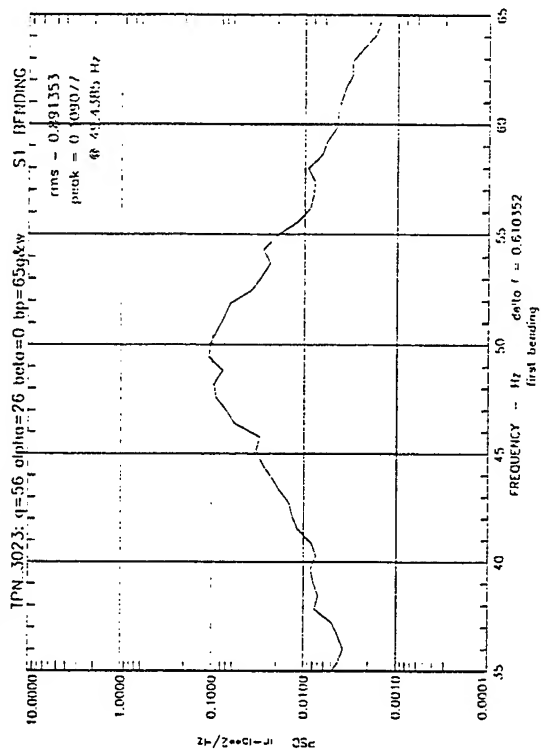




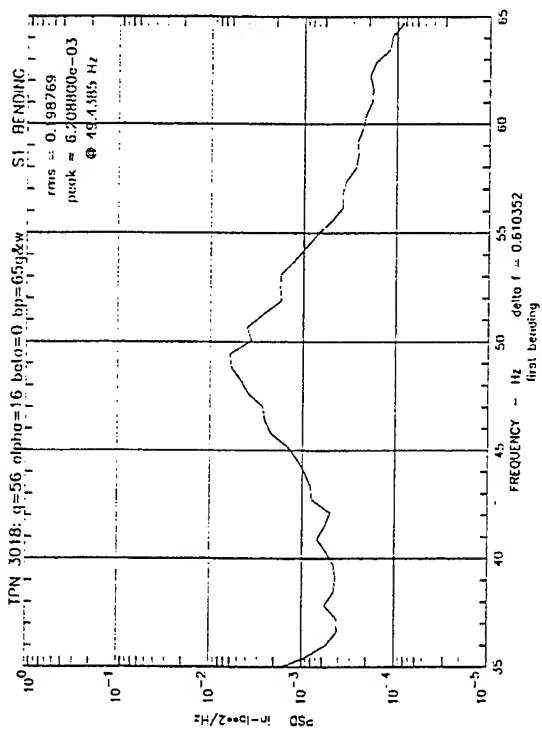
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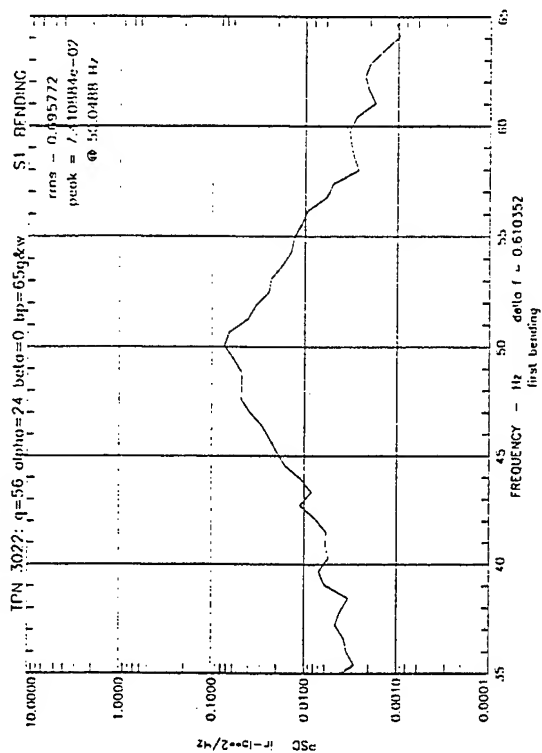
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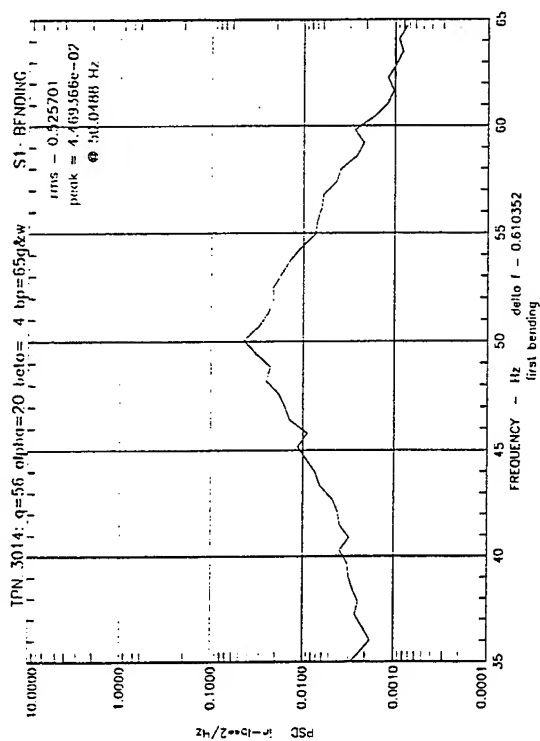
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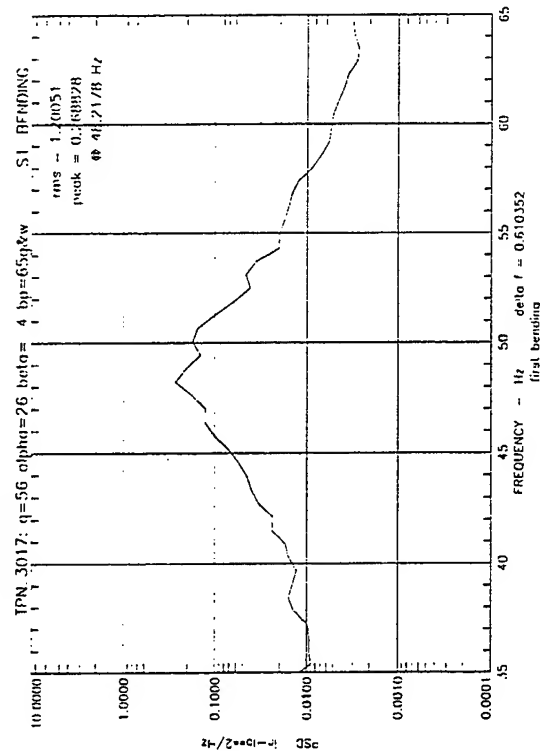
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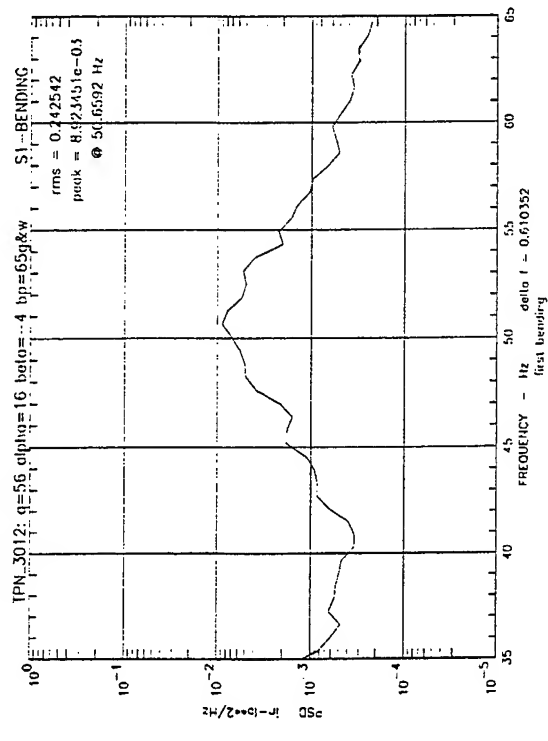
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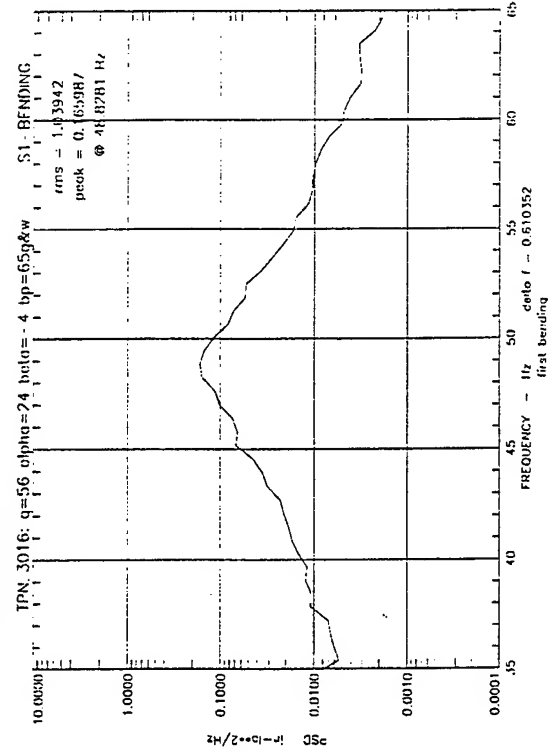
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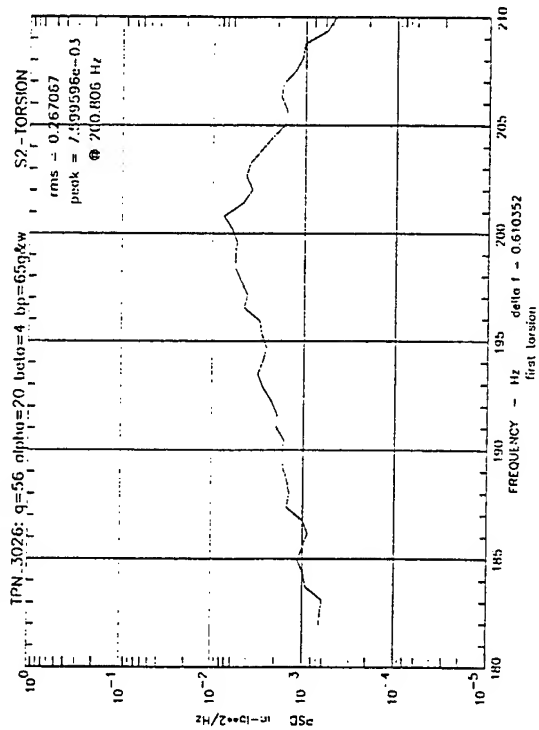
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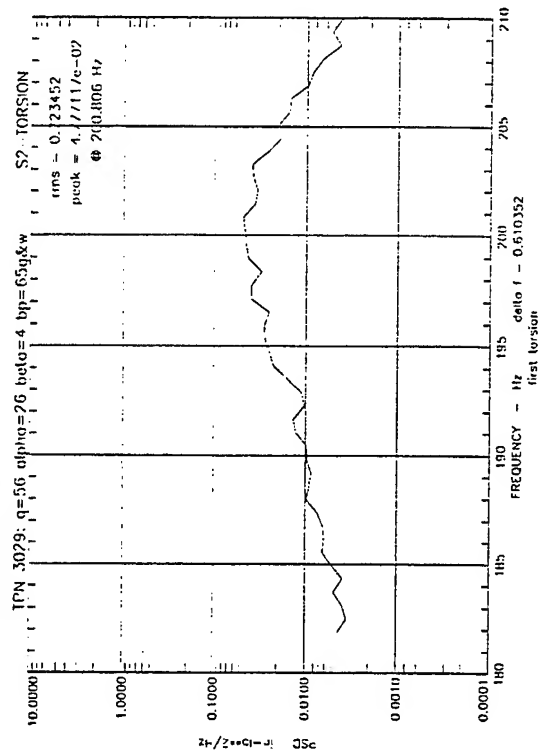
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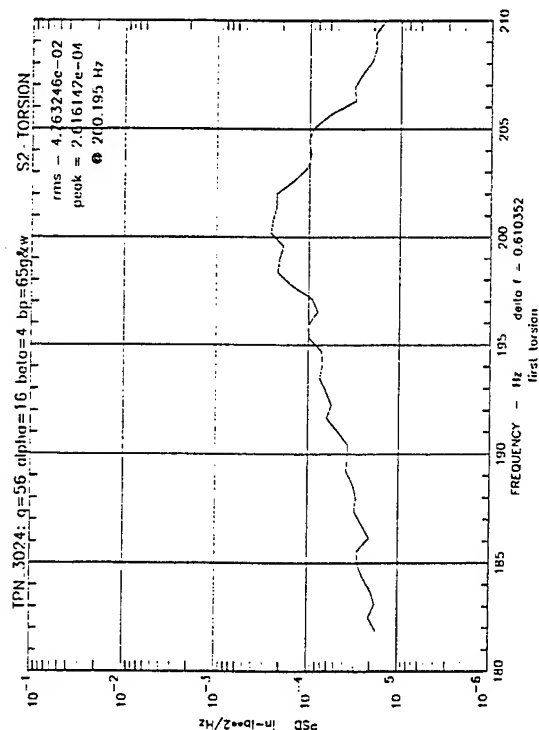
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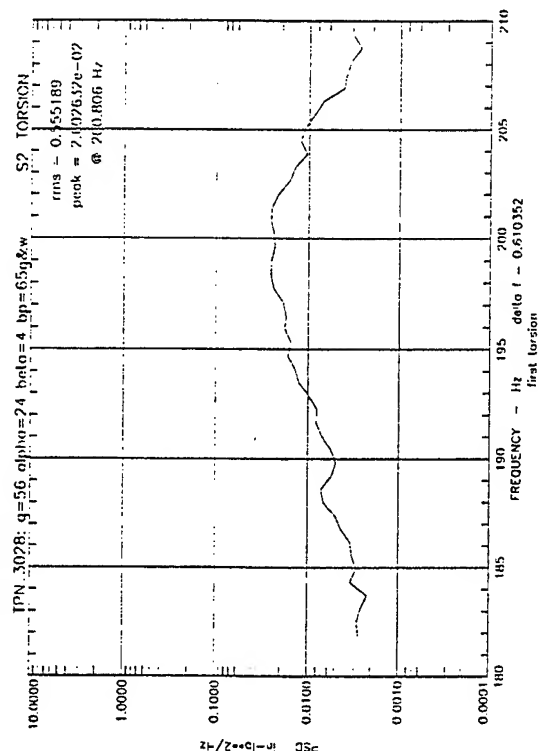
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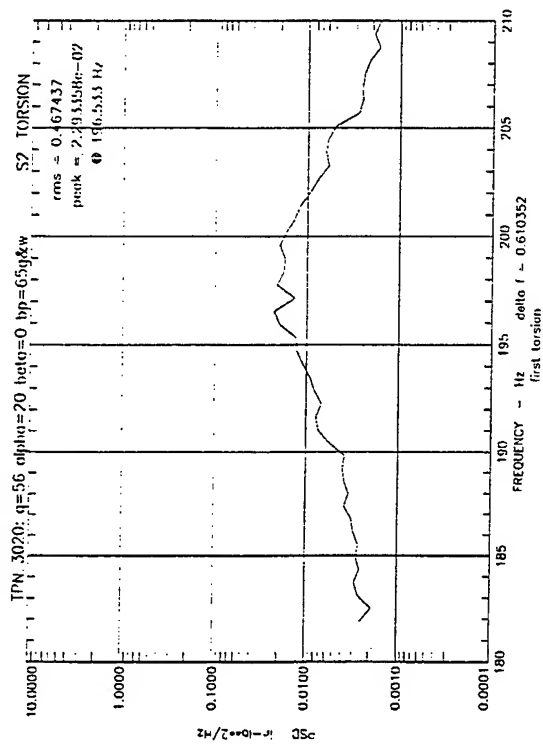
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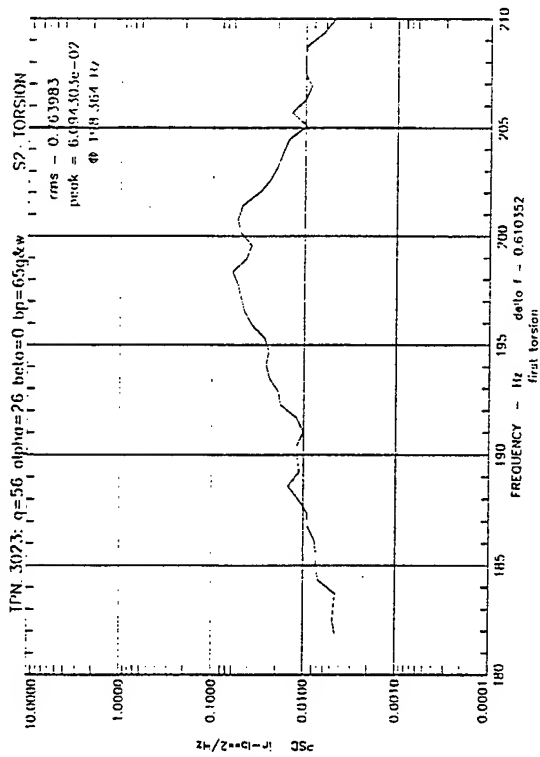
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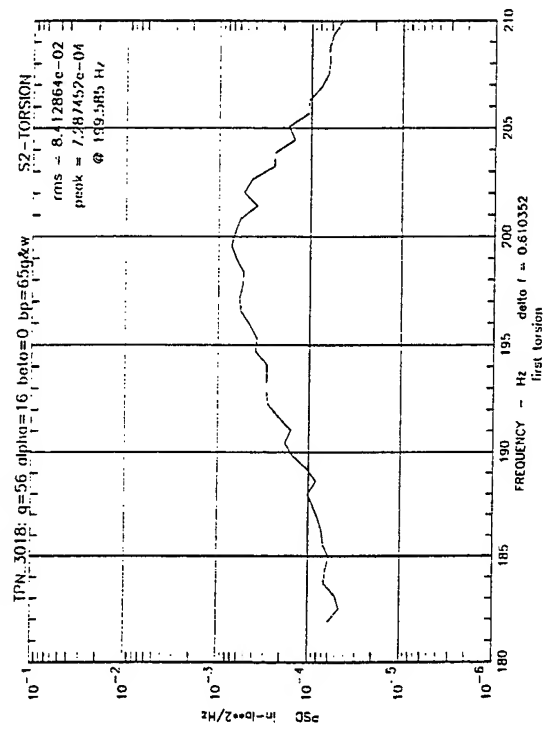
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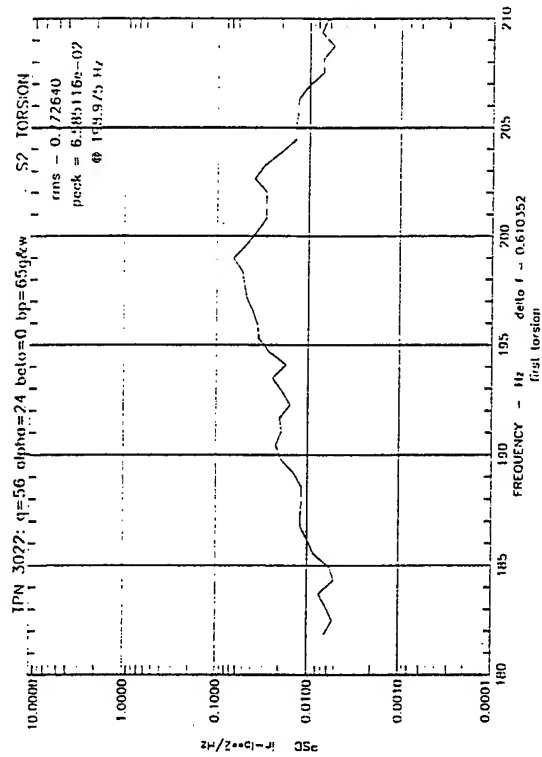
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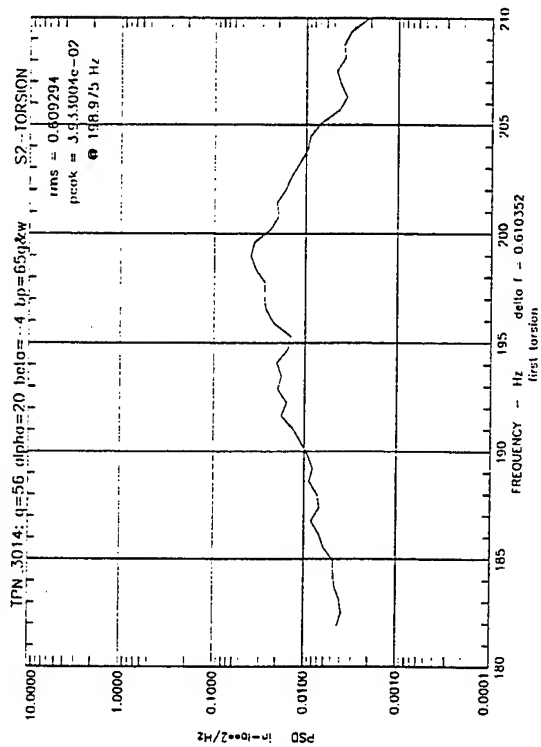
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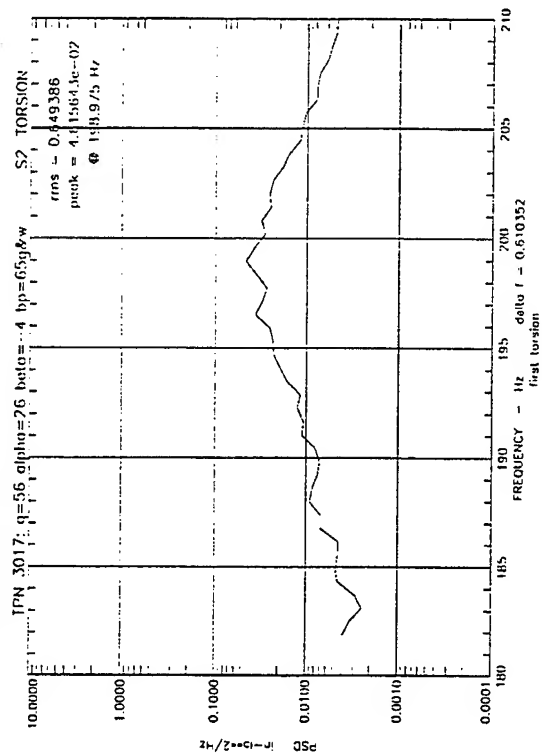
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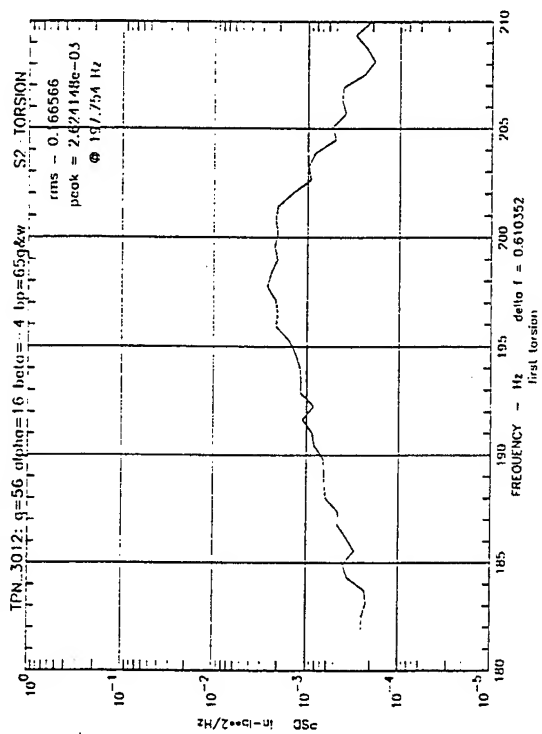
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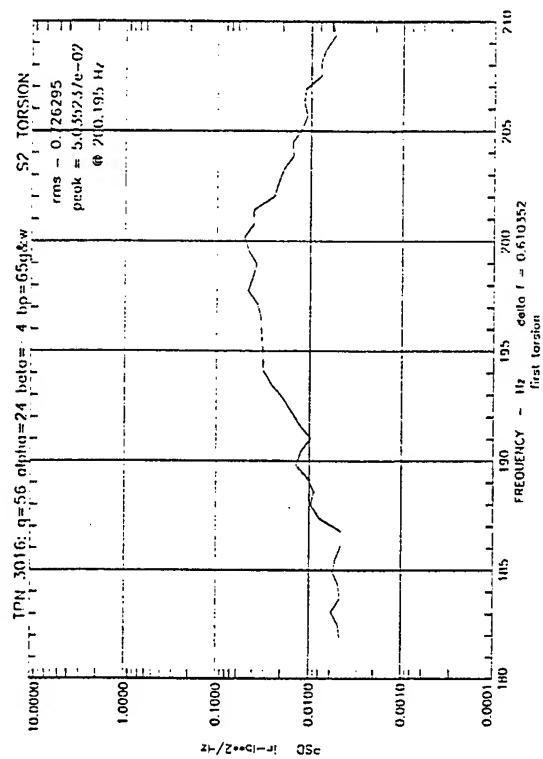
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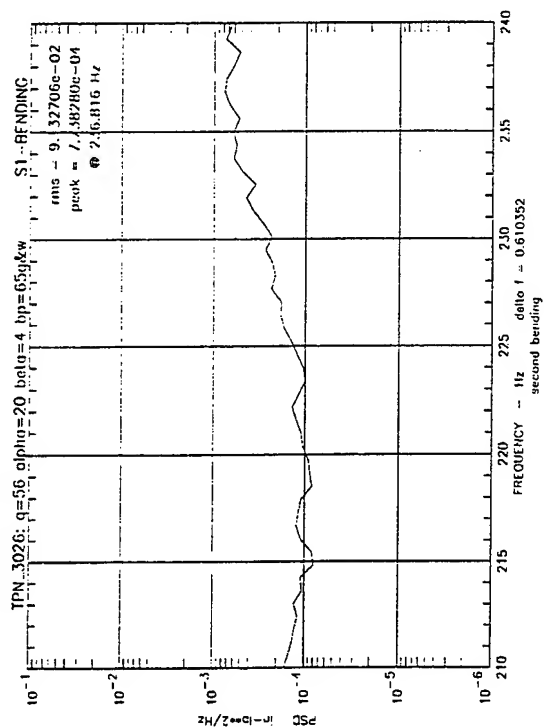
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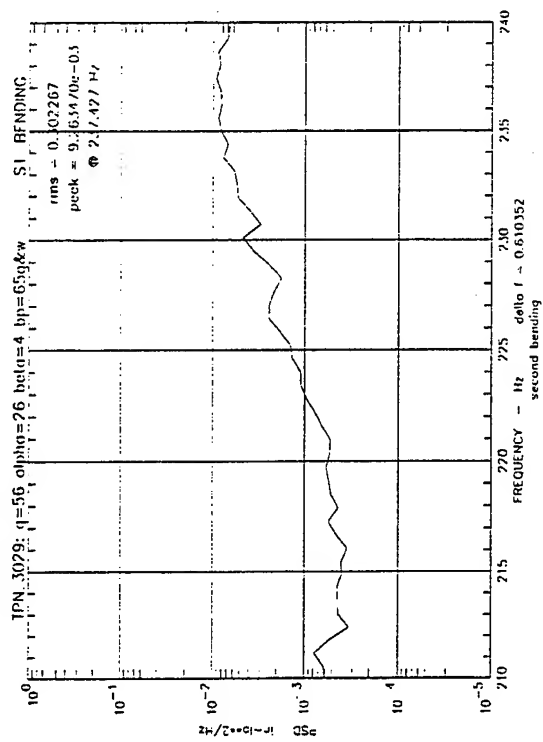
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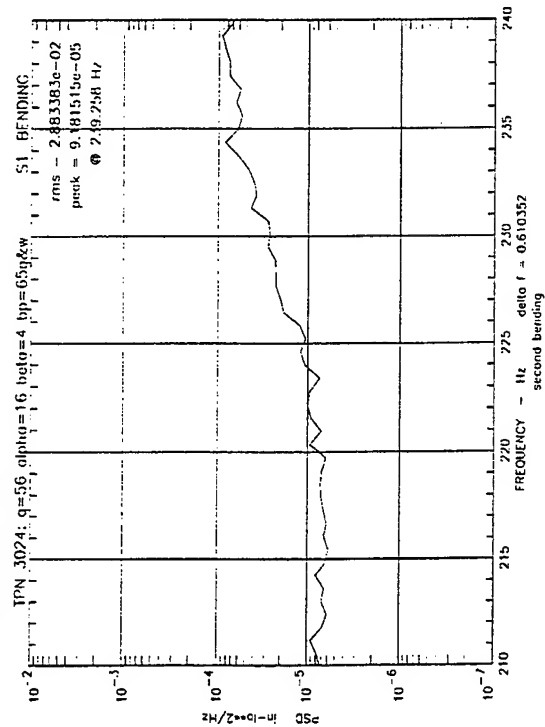
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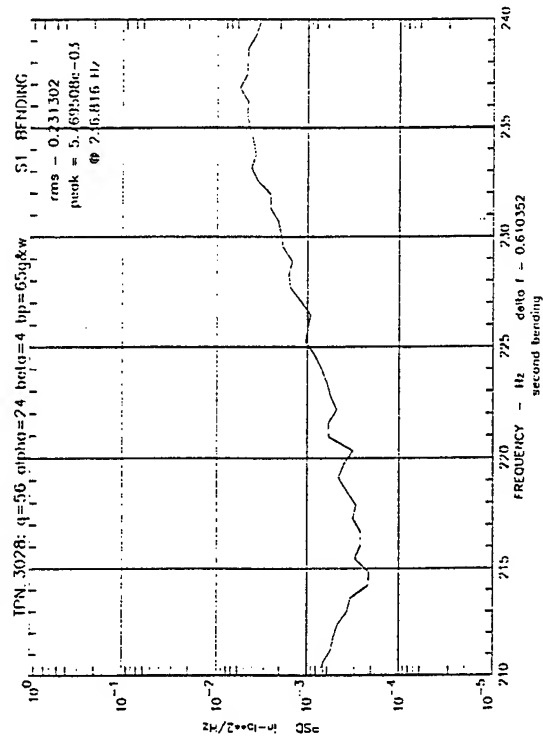
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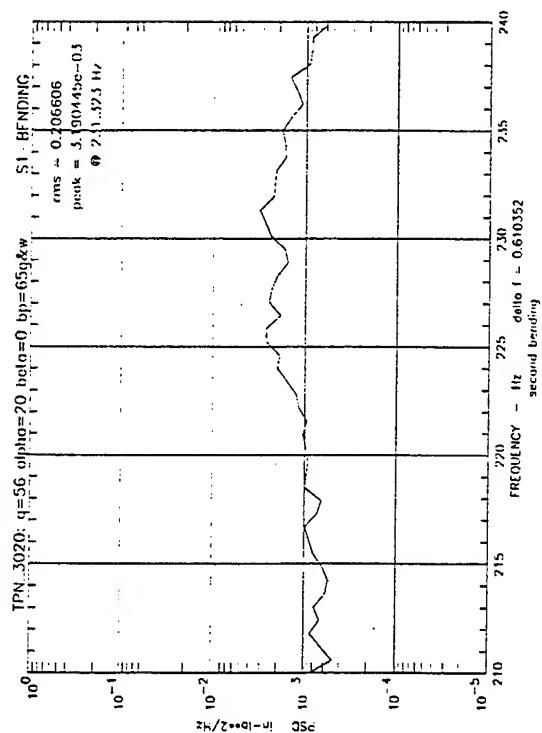
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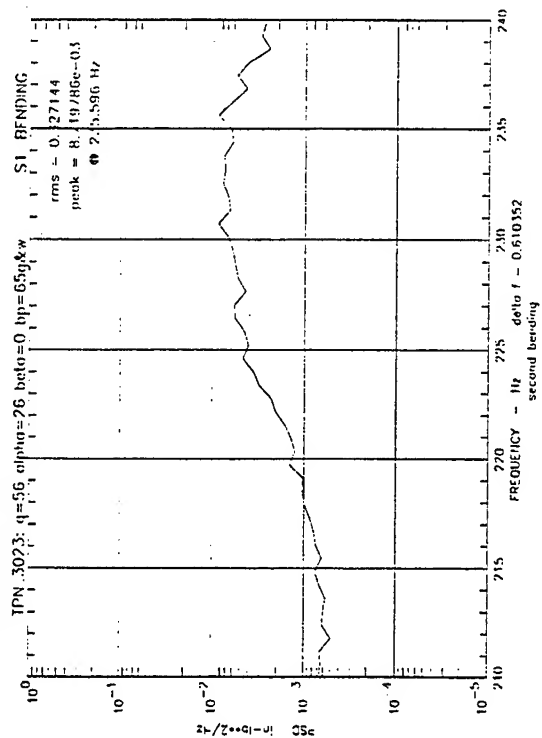
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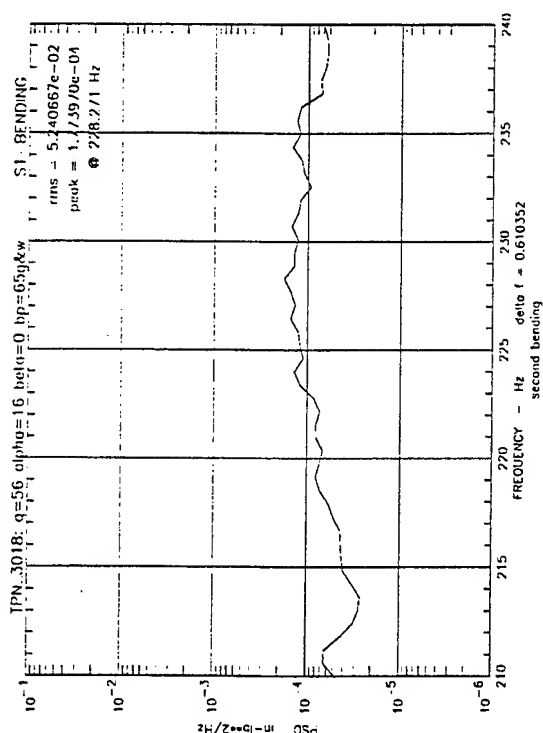
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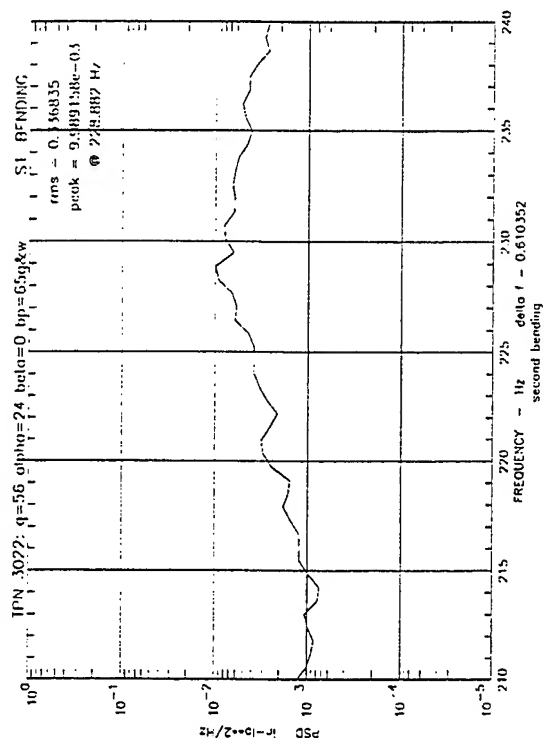
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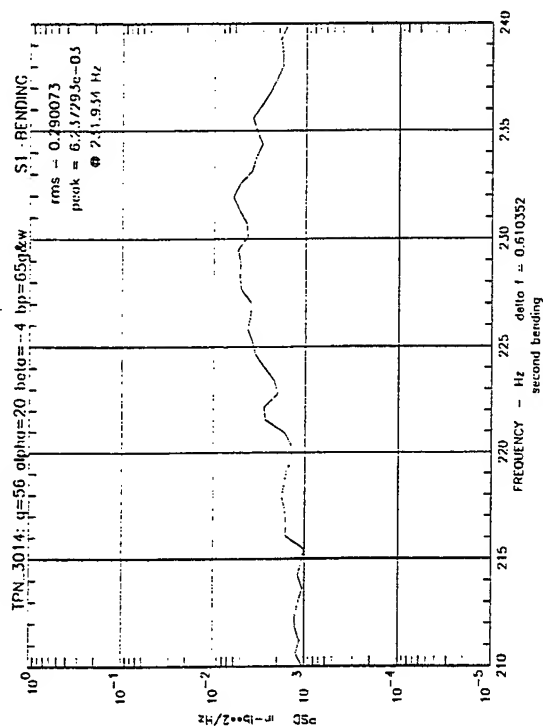
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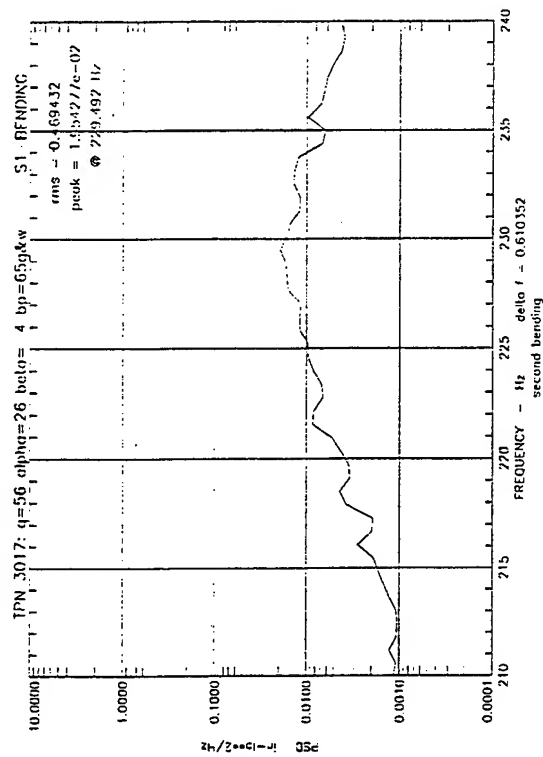
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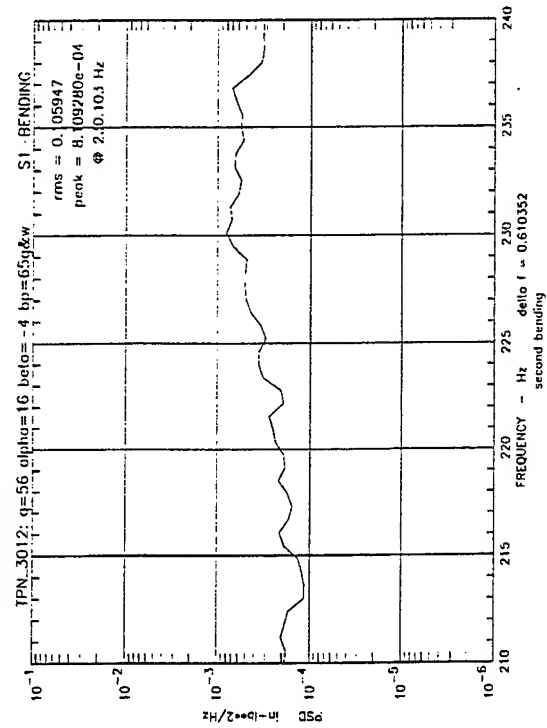
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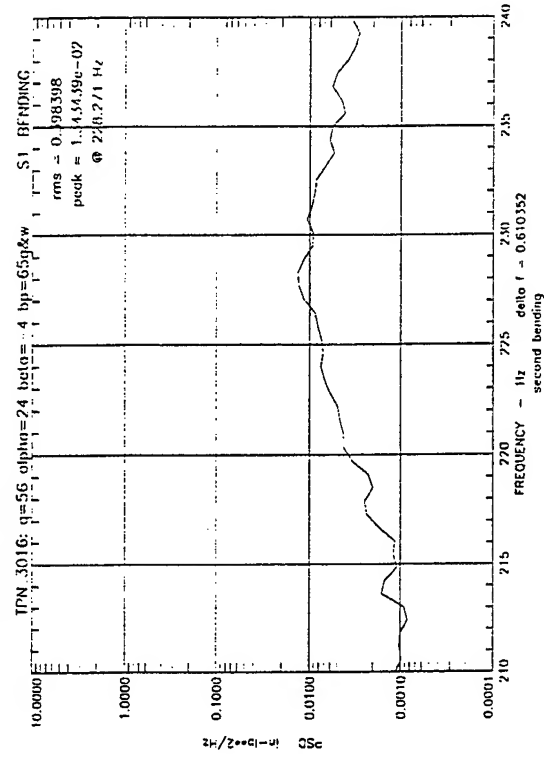
F-15 Tail Buffet Test



F-15 Tail Buffet Test



F-15 Tail Buffet Test





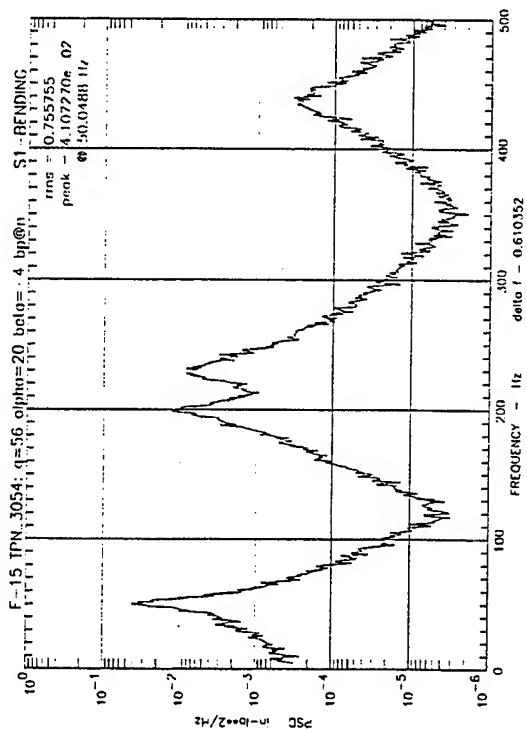
**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION  
PSD GRAPHS  
Q= 56 PSF**

**2.1.1.4 NBP = 87 psi, BETA= 0, +4, -4, ALPHA = 0....32 Deg**

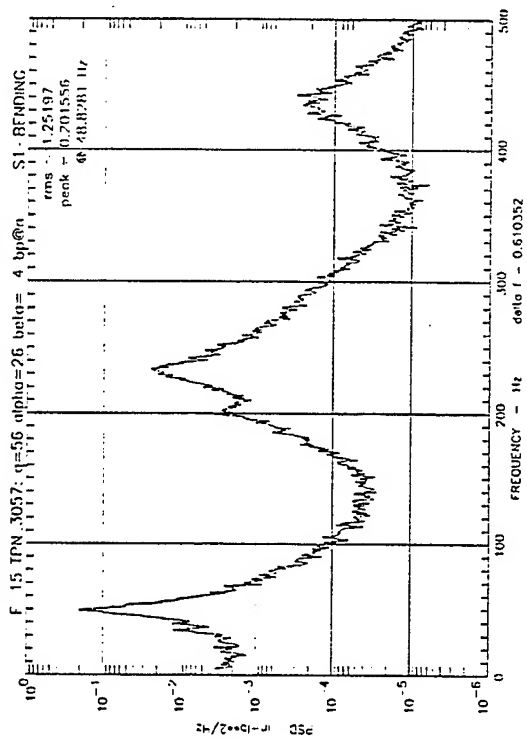
**FLEXIBLE TAIL RESPONSE  
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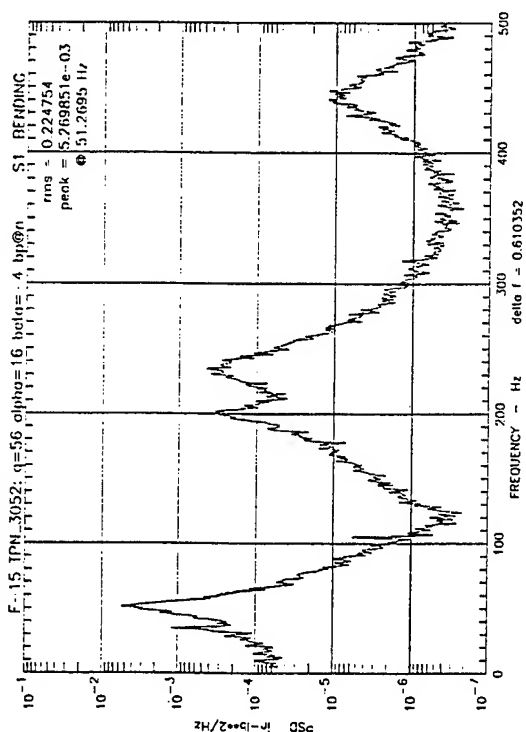
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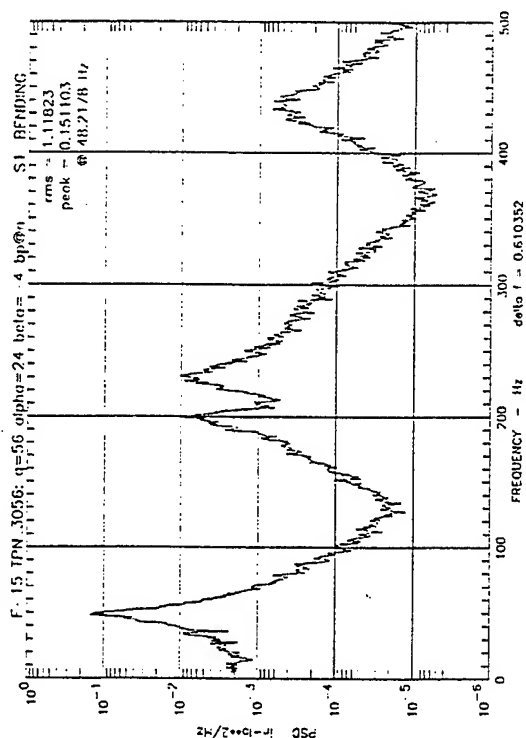
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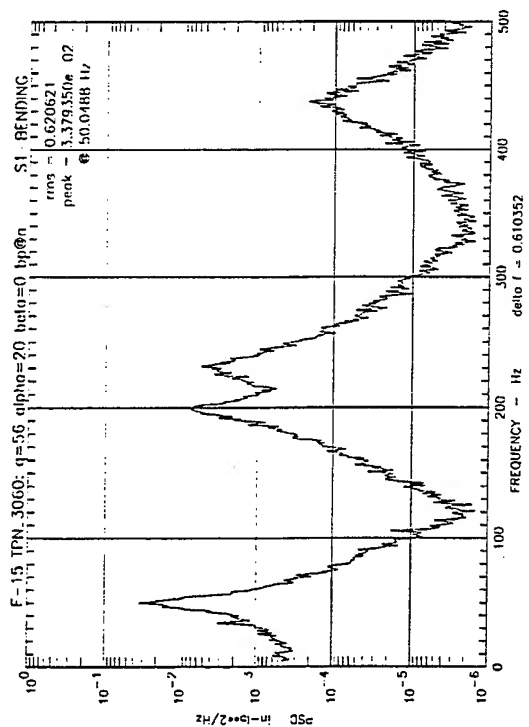
F-15 Tail Buffet Test



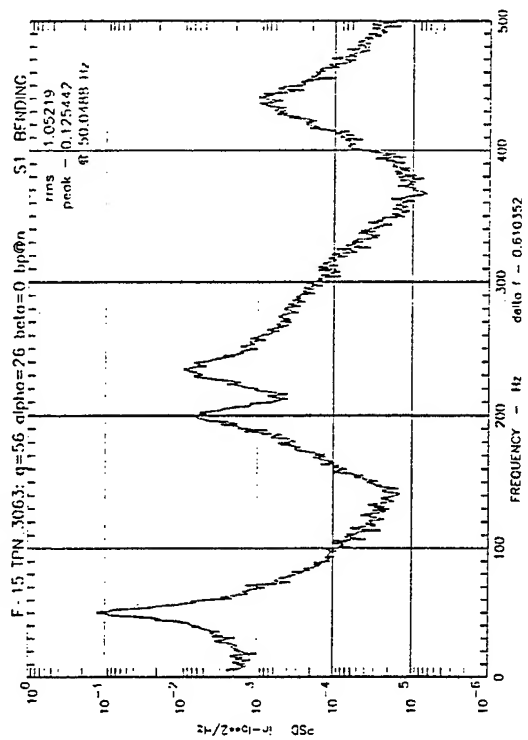
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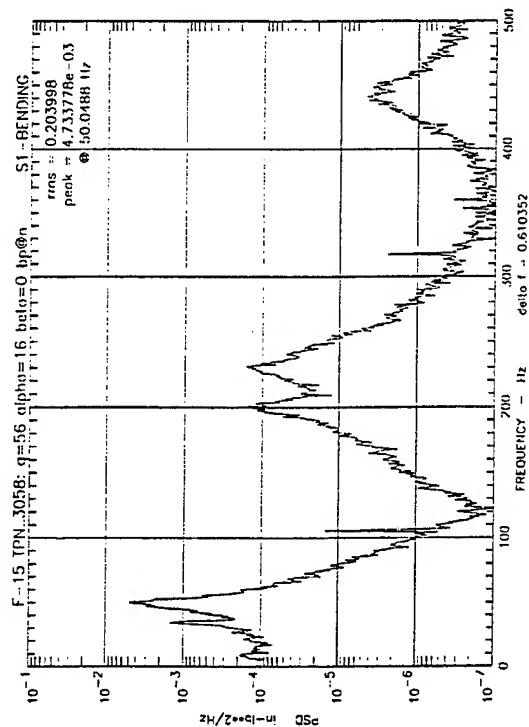
# F-15 Tail Buffet Test



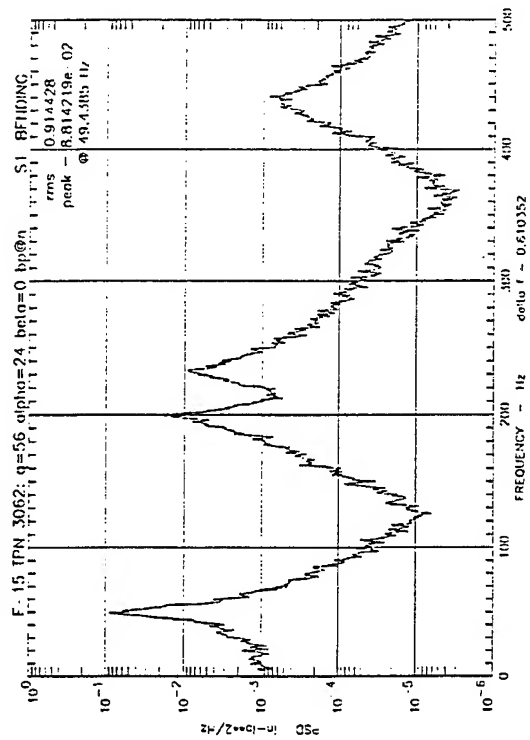
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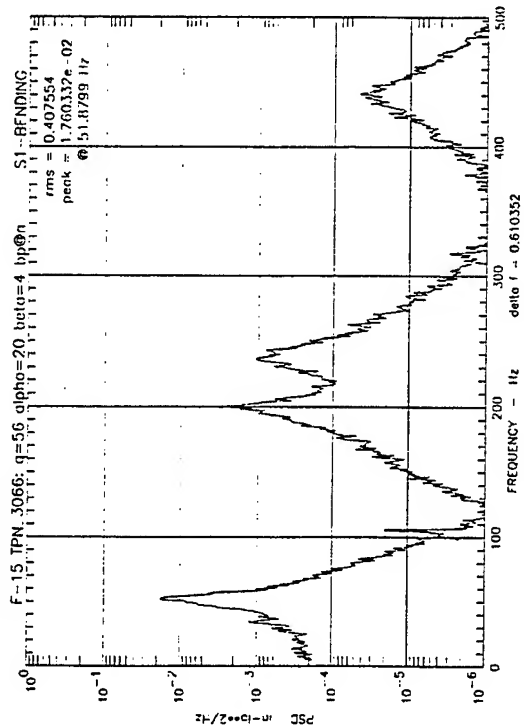
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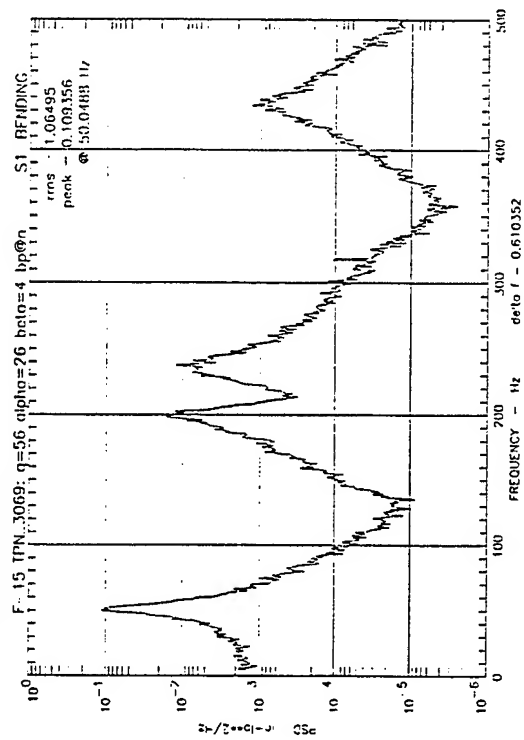
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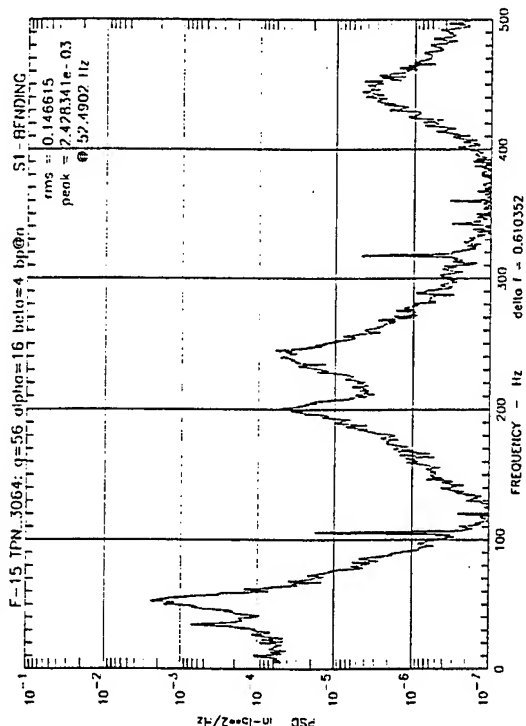
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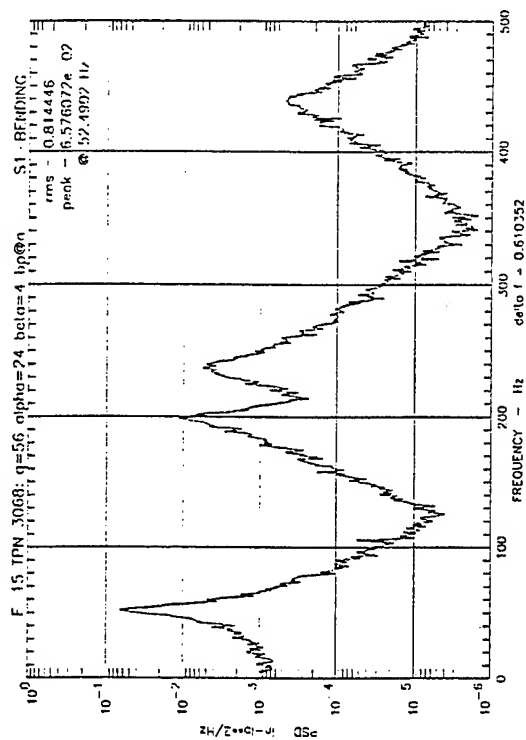
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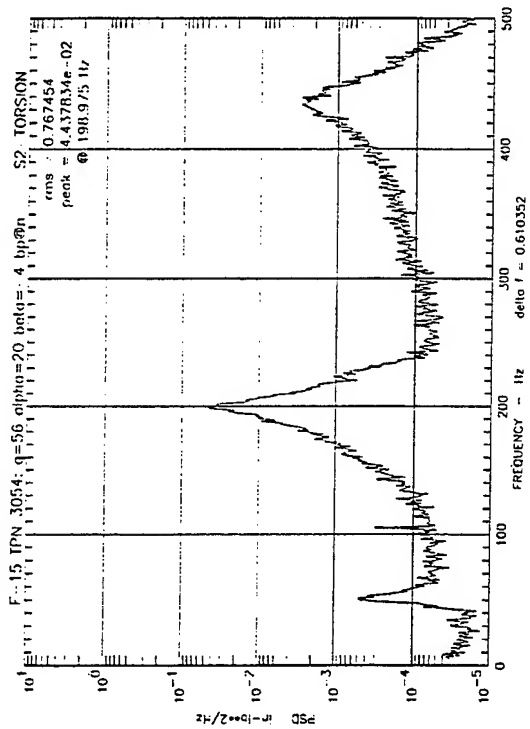
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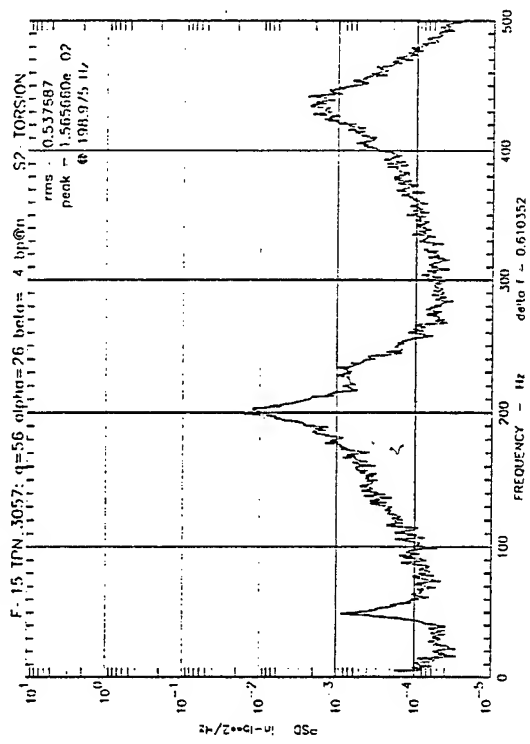
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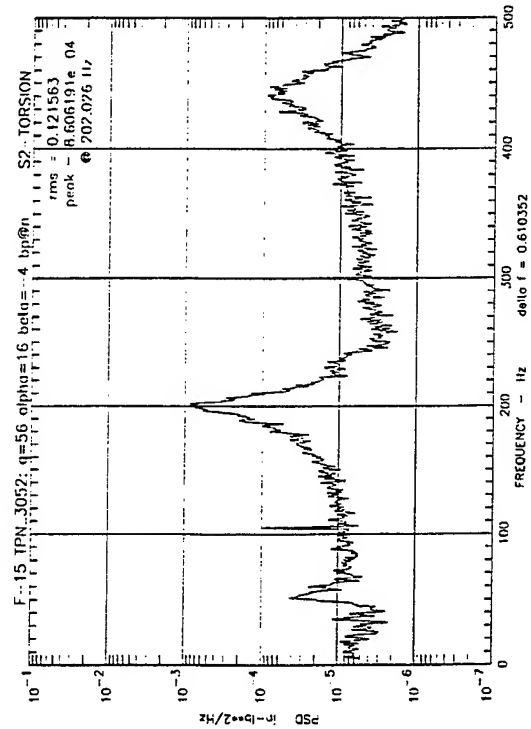
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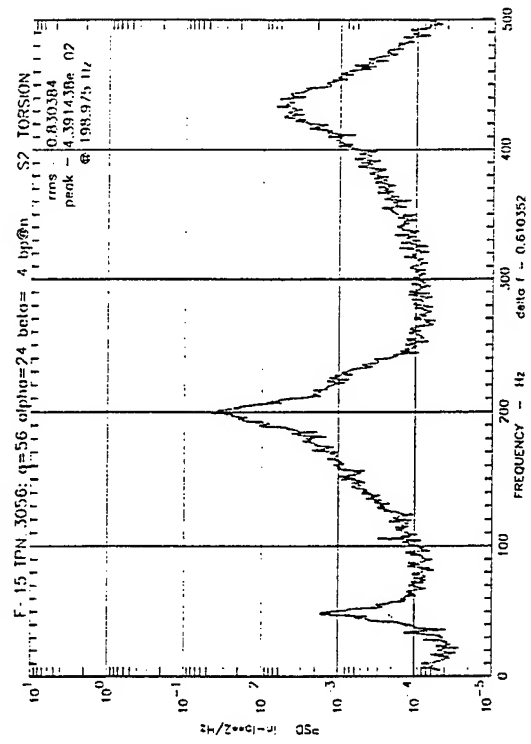
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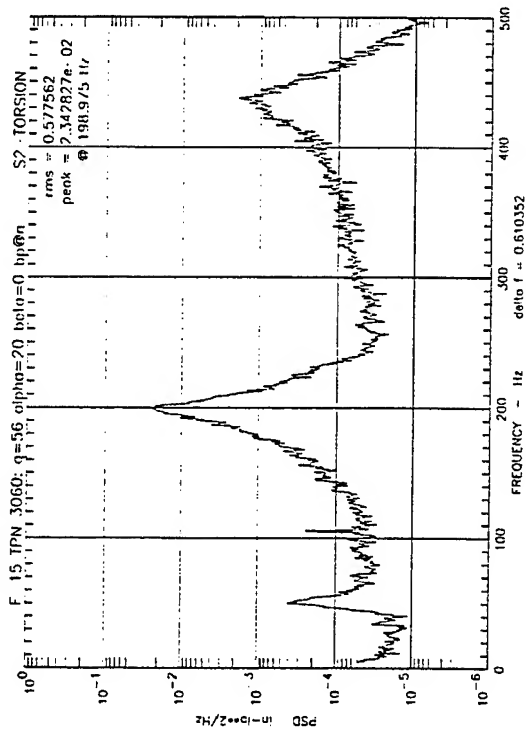
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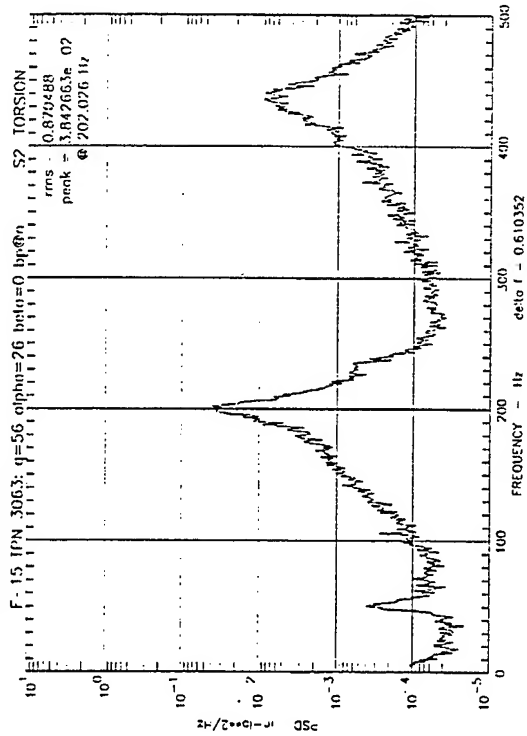
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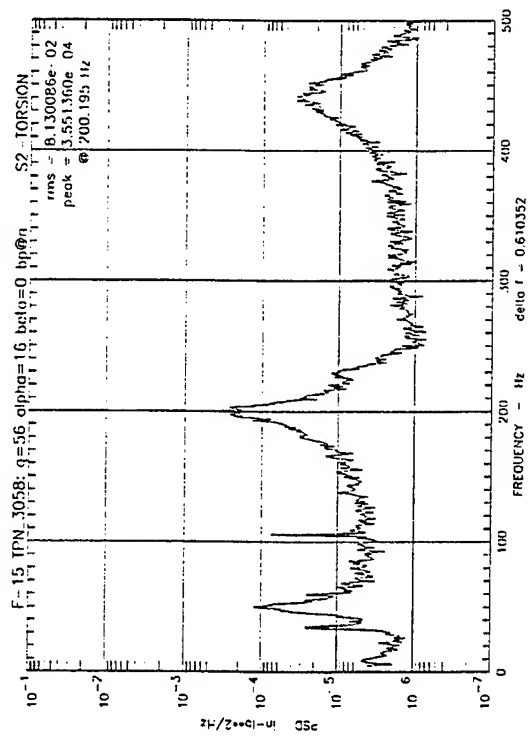
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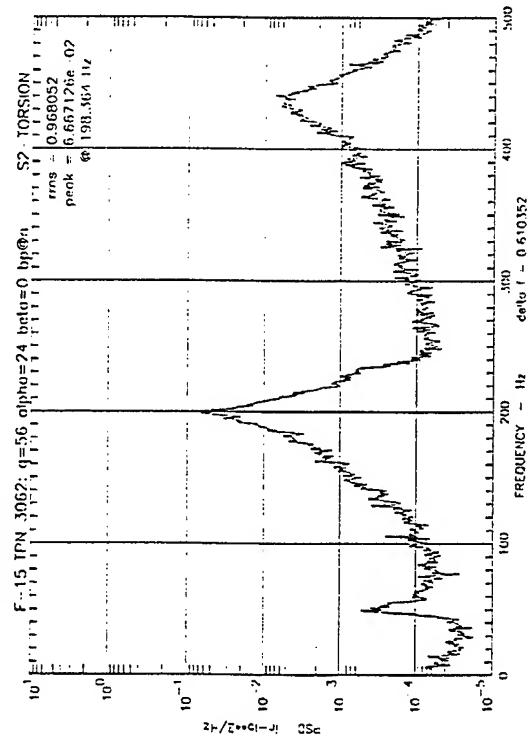
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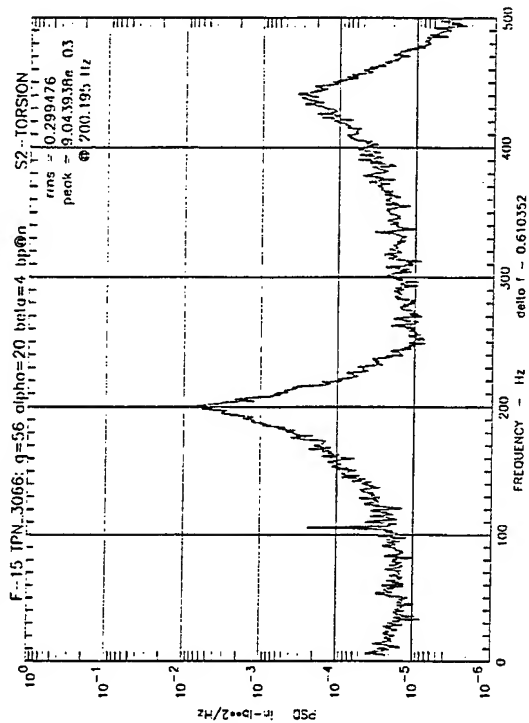
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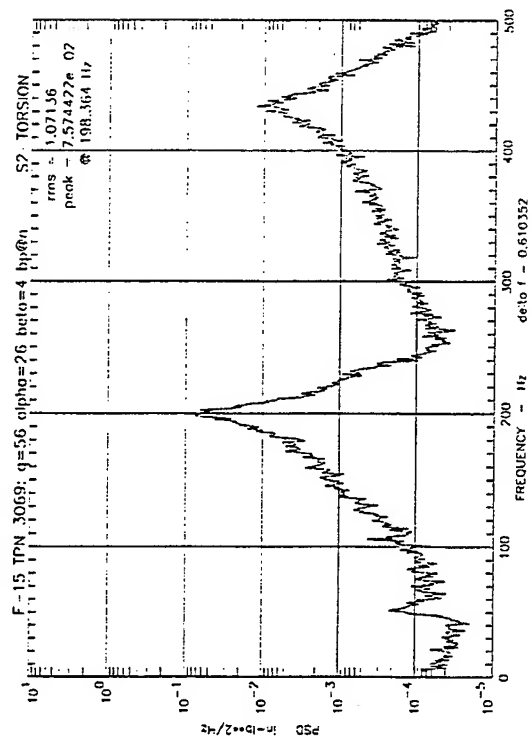
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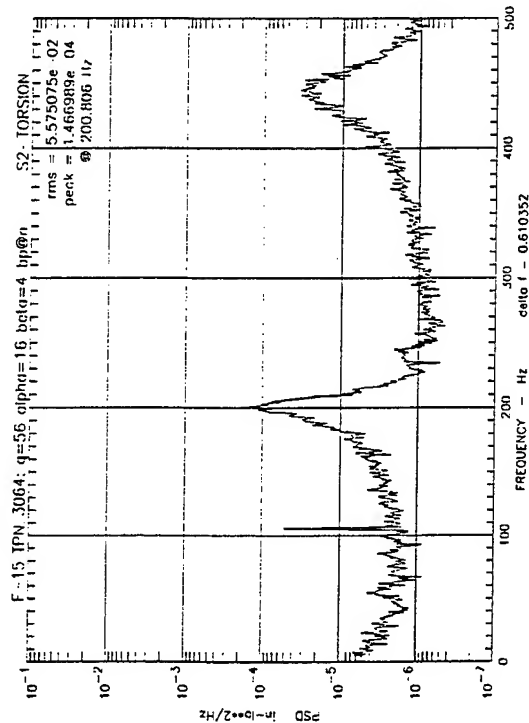
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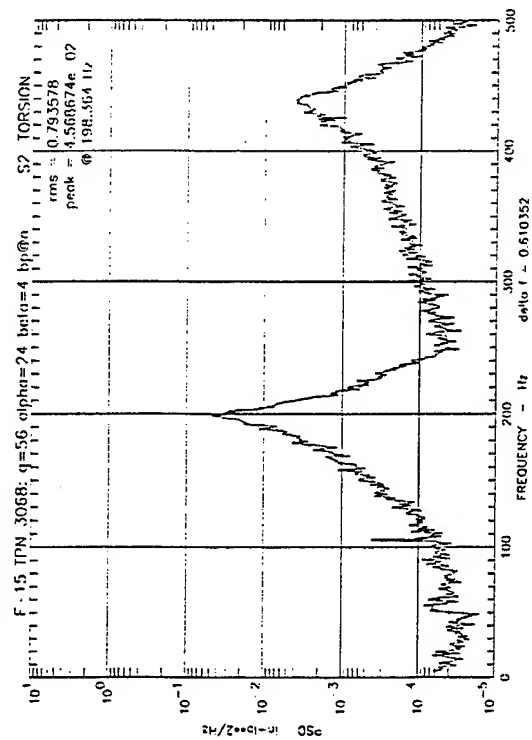
F-15 Tail Buffet Test



F-15 Tail Buffet Test

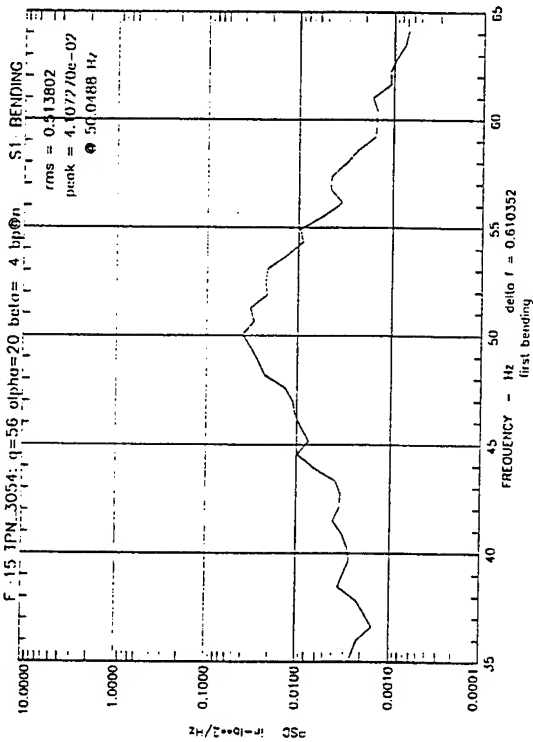


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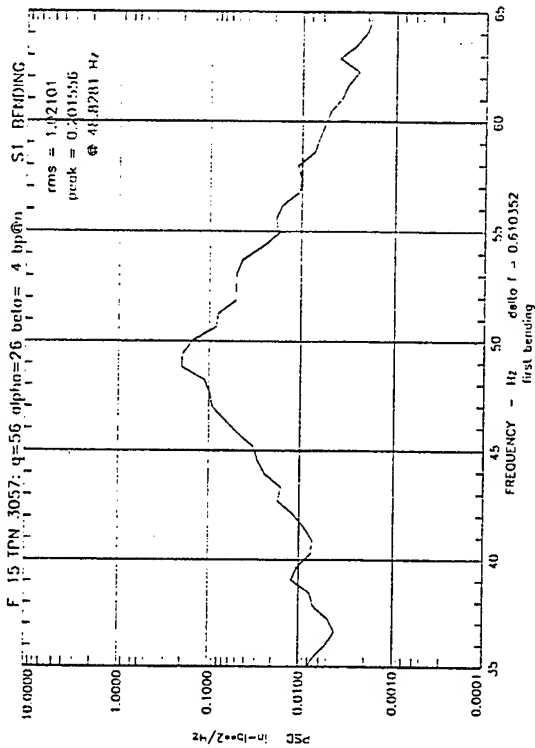




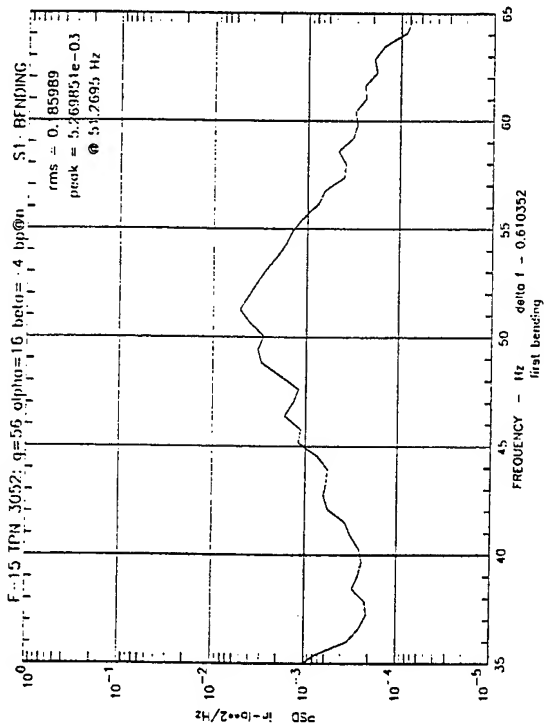
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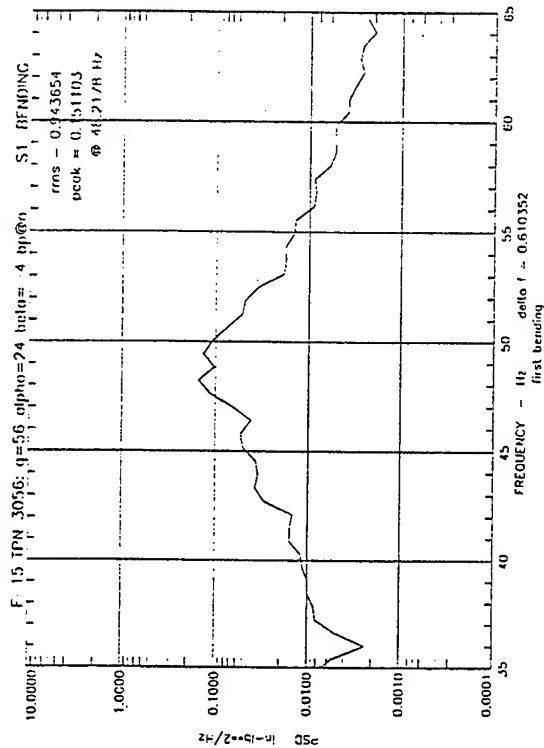
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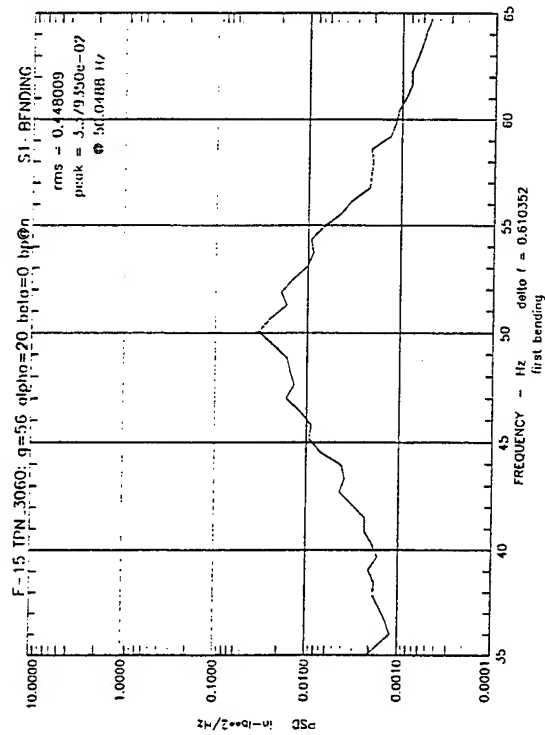
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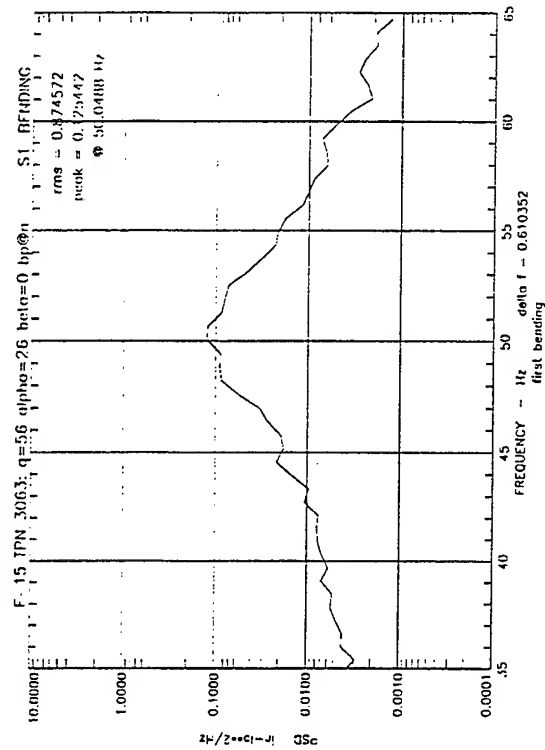
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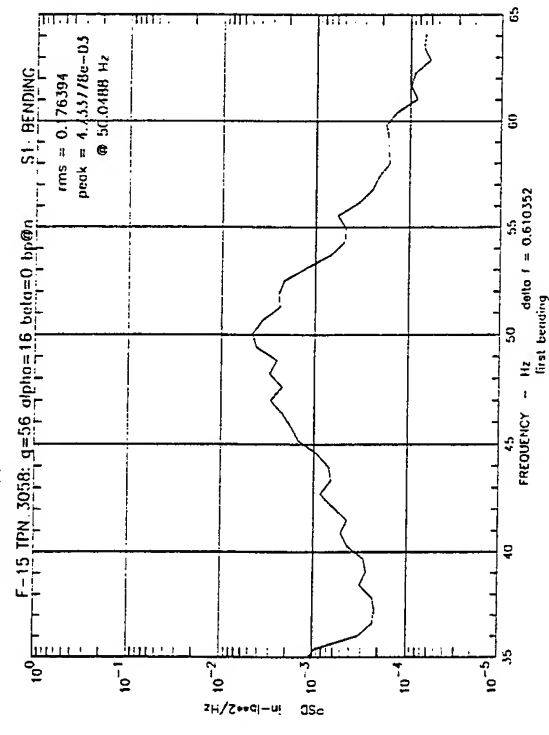
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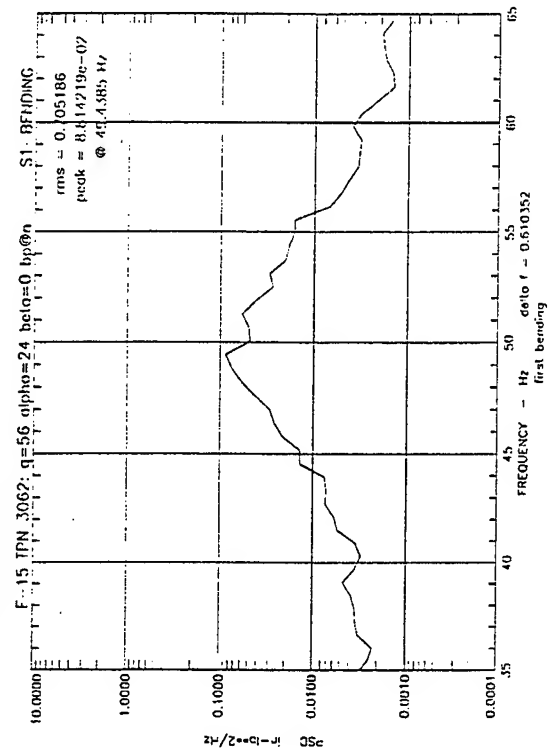
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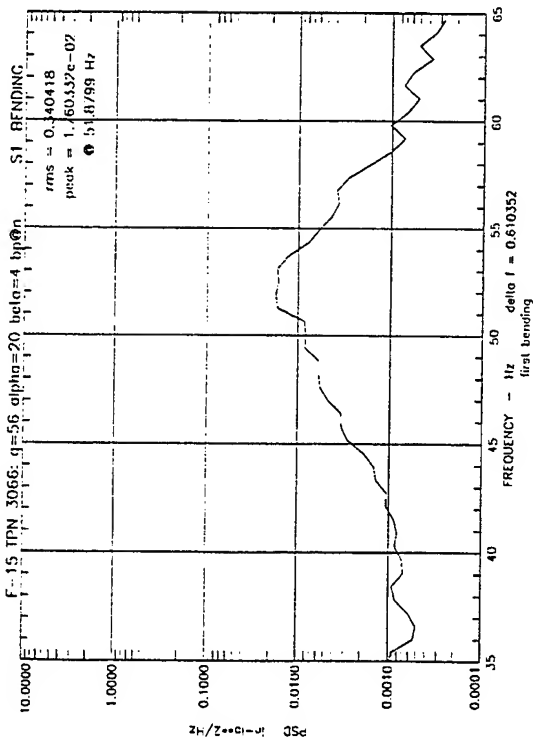
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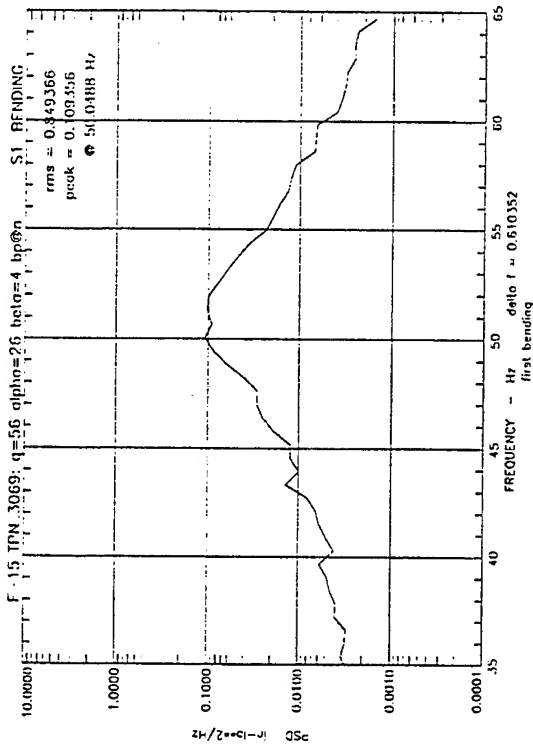
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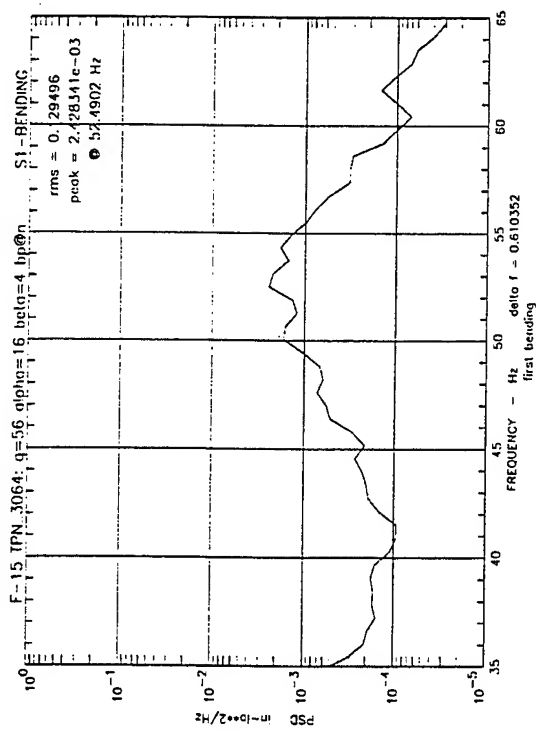
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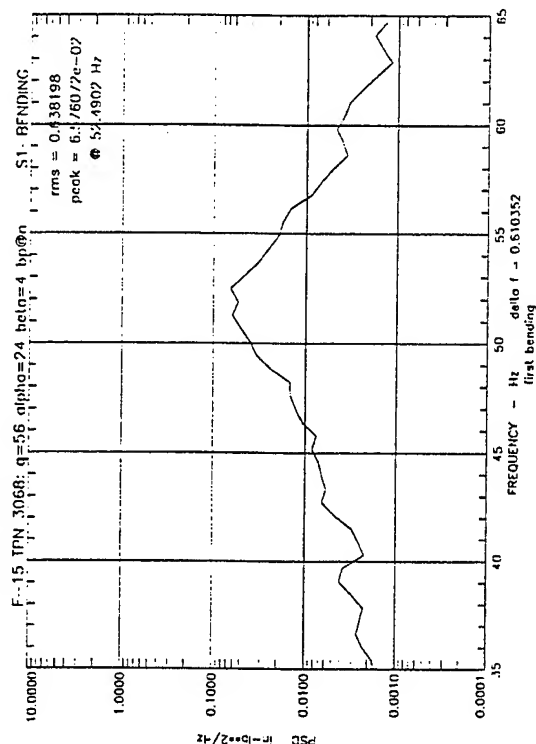
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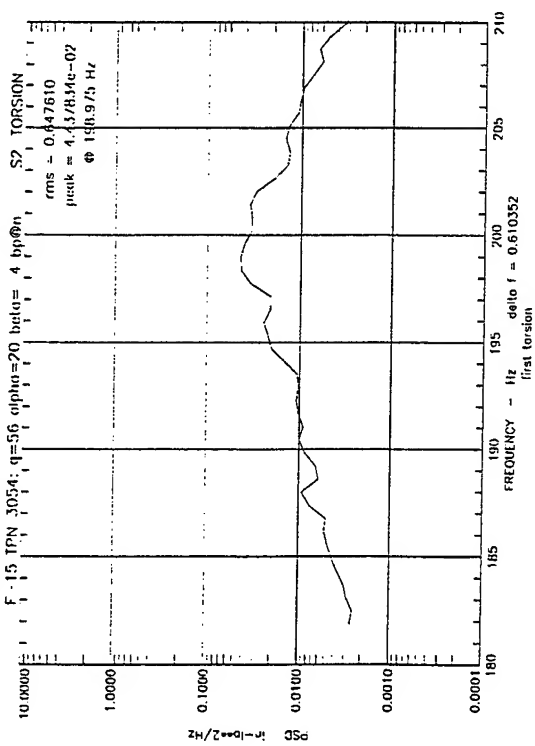
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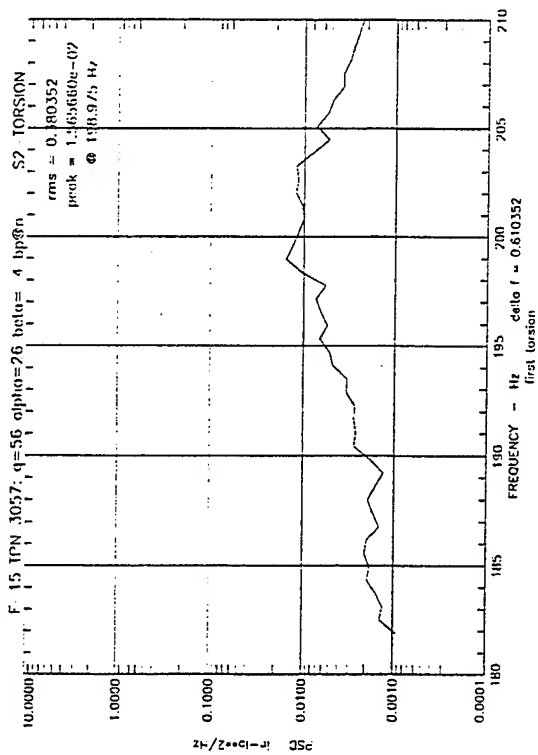
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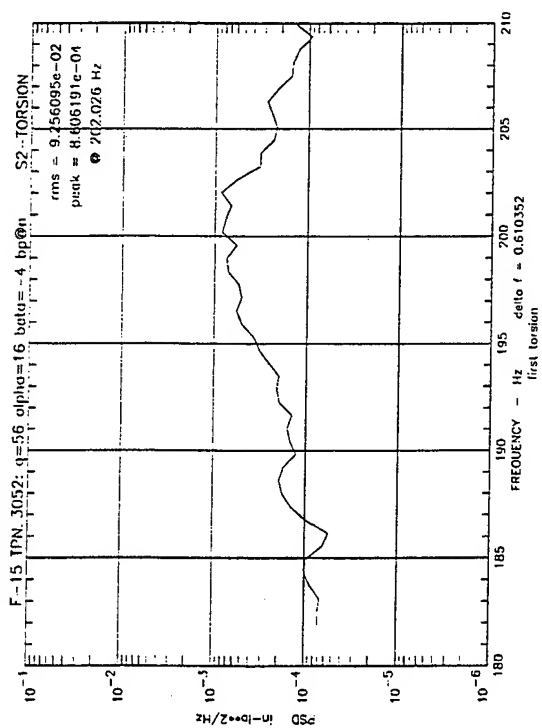
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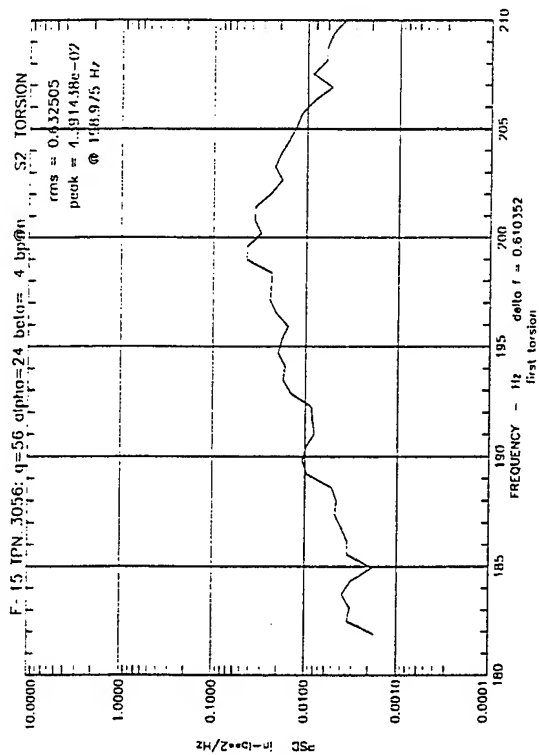
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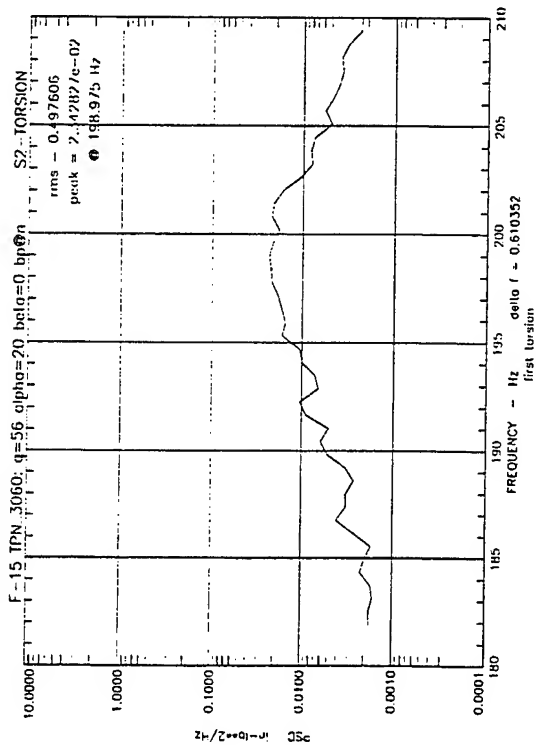
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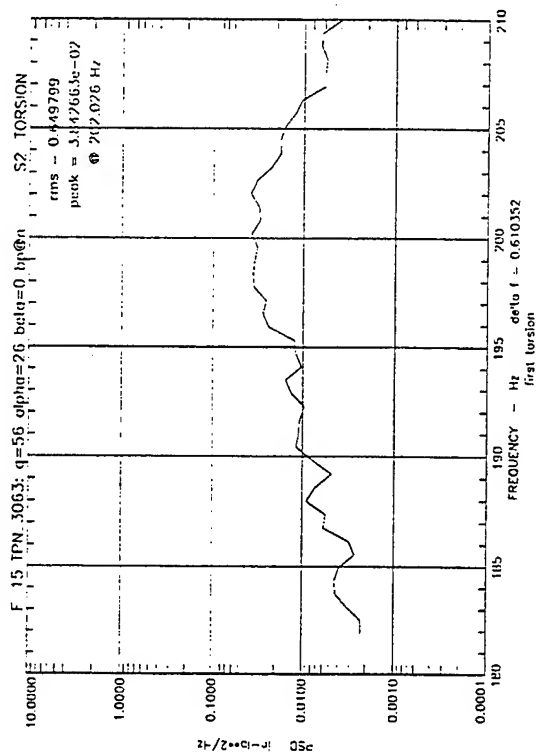
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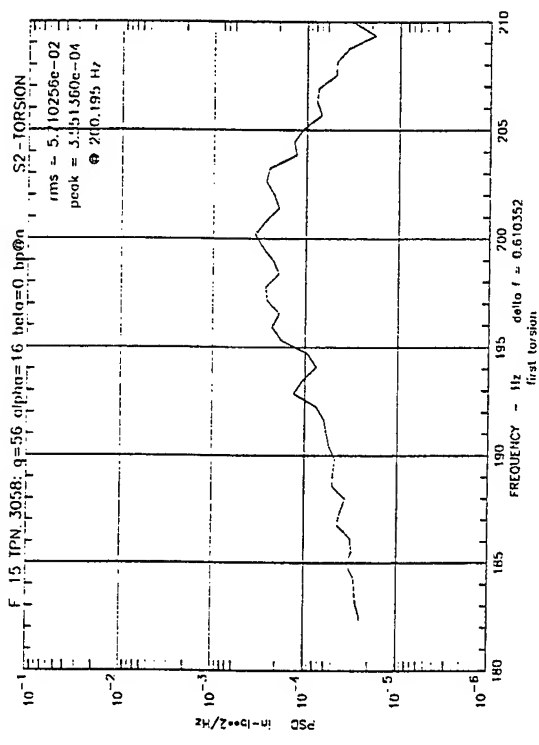
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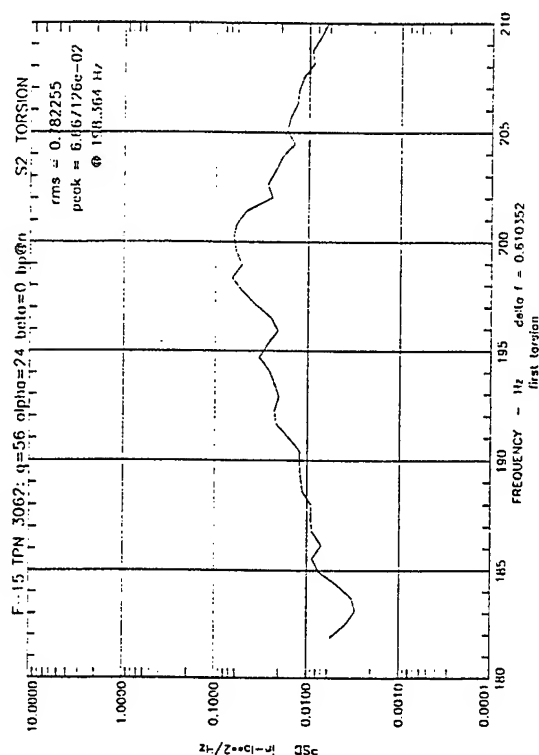
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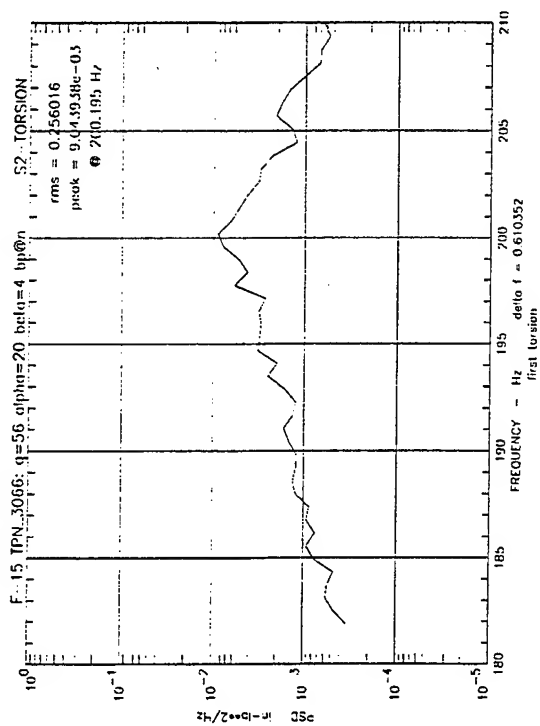
F-15 Tail Buffet Test



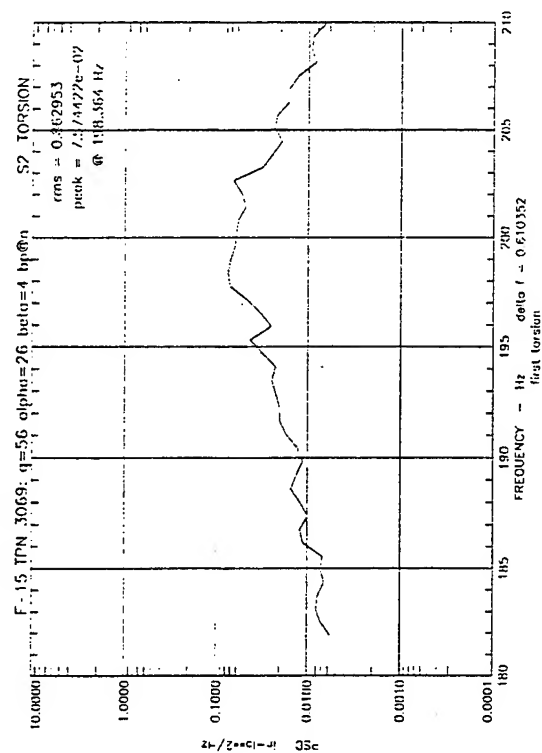
F-15 Tail Buffet Test



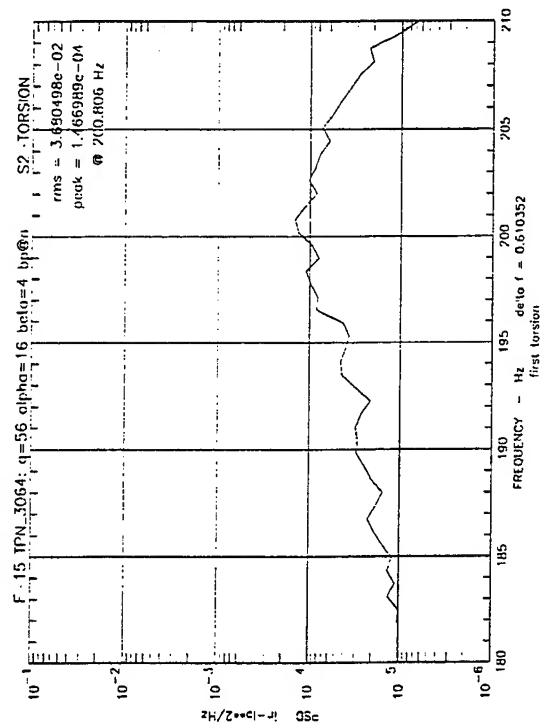
F-15 Tail Buffet Test



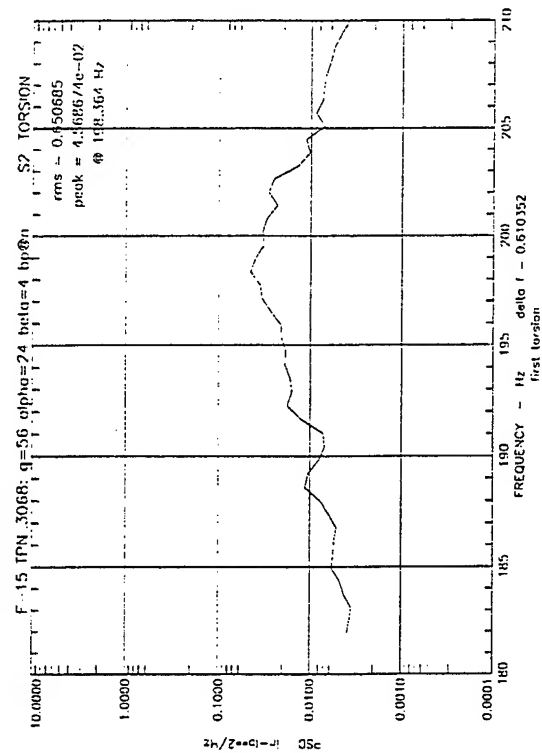
F-15 Tail Buffet Test



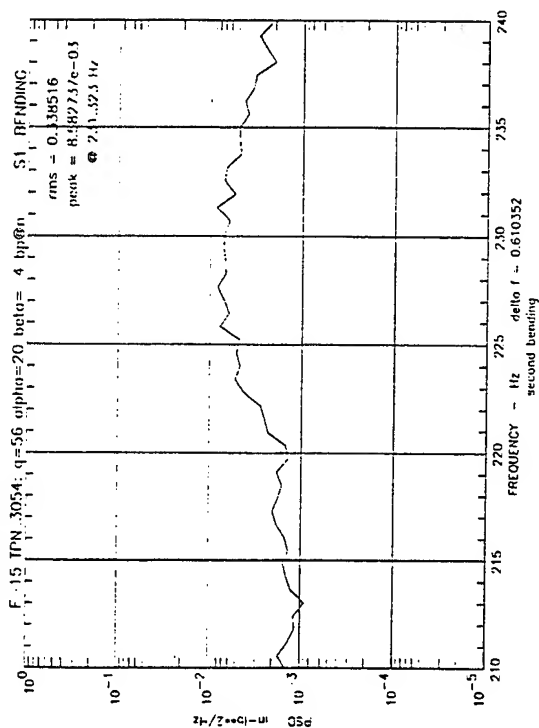
F-15 Tail Buffet Test



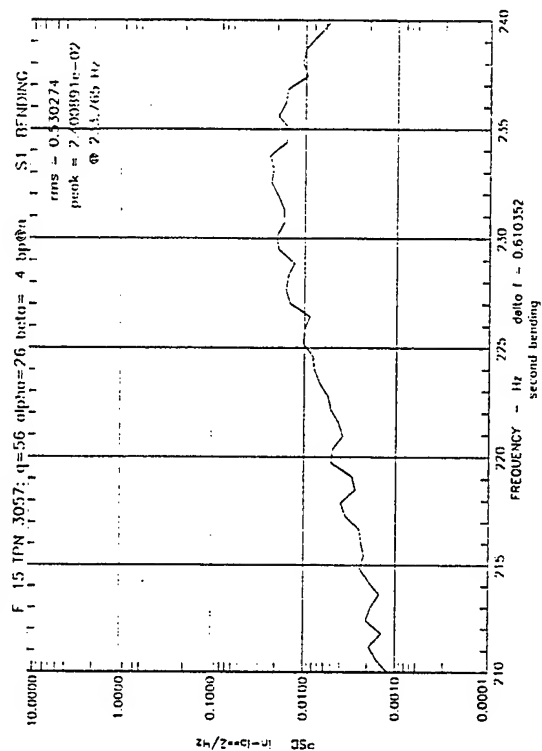
F-15 Tail Buffet Test



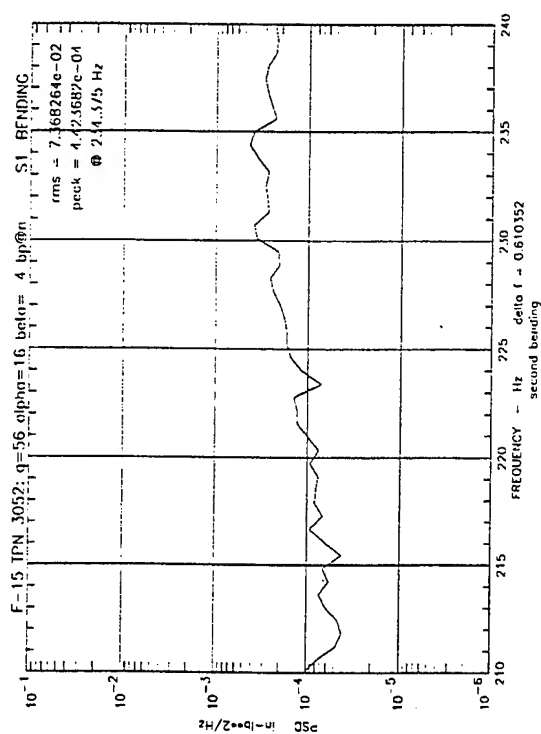
# F-15 Tail Buffet Test



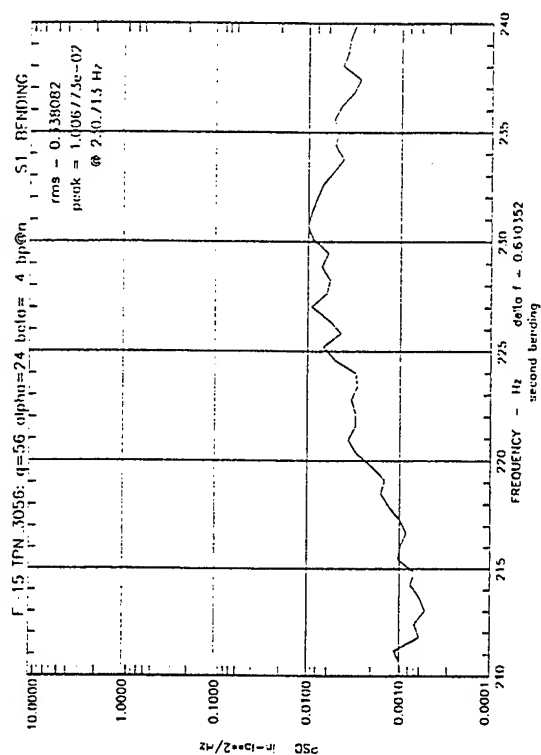
# F-15 Tail Buffet Test

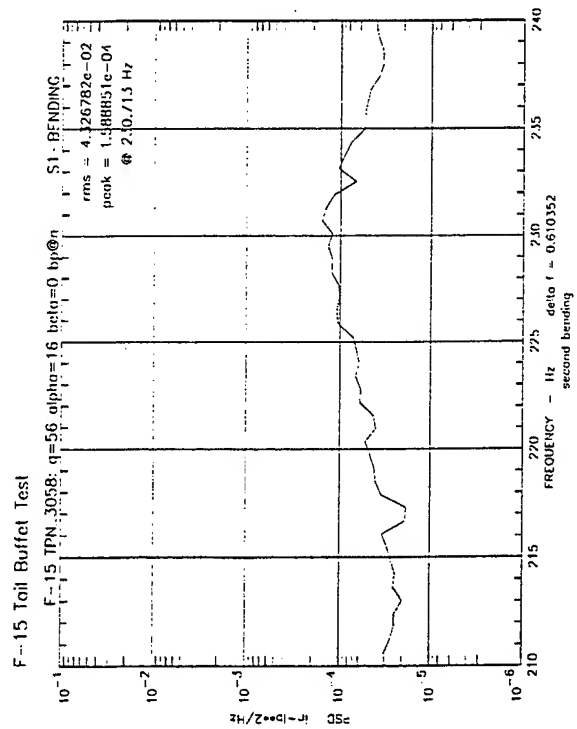
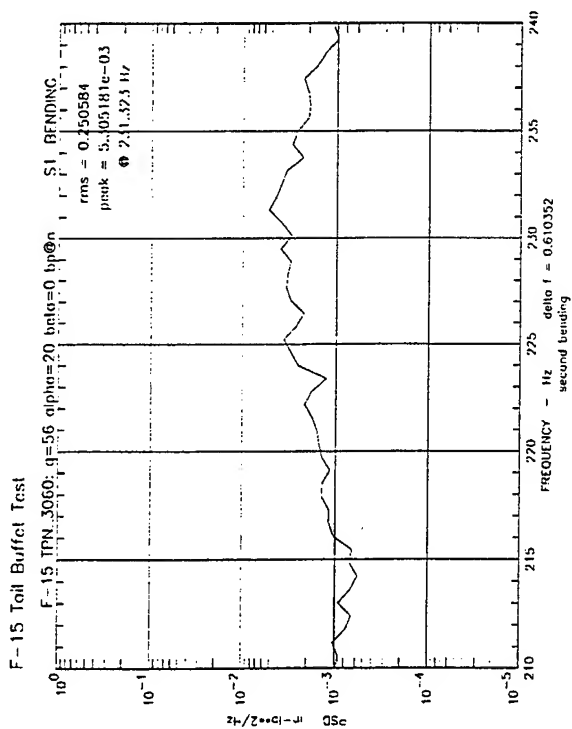
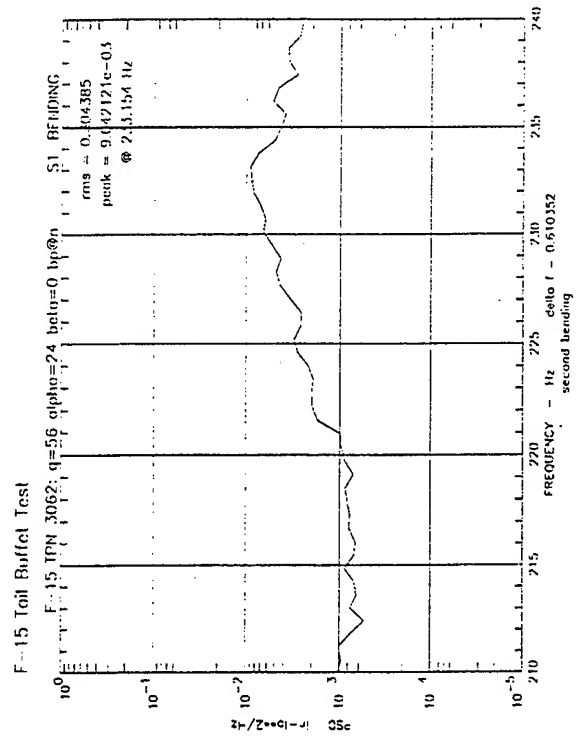
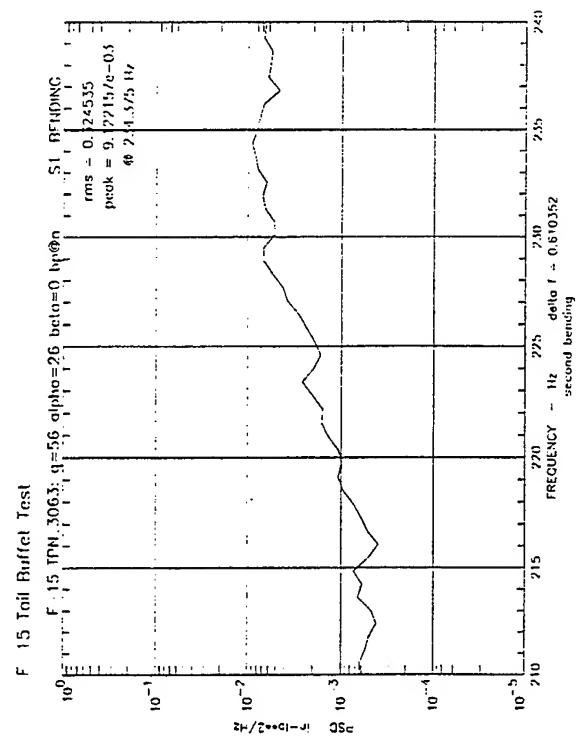


# F-15 Tail Buffet Test



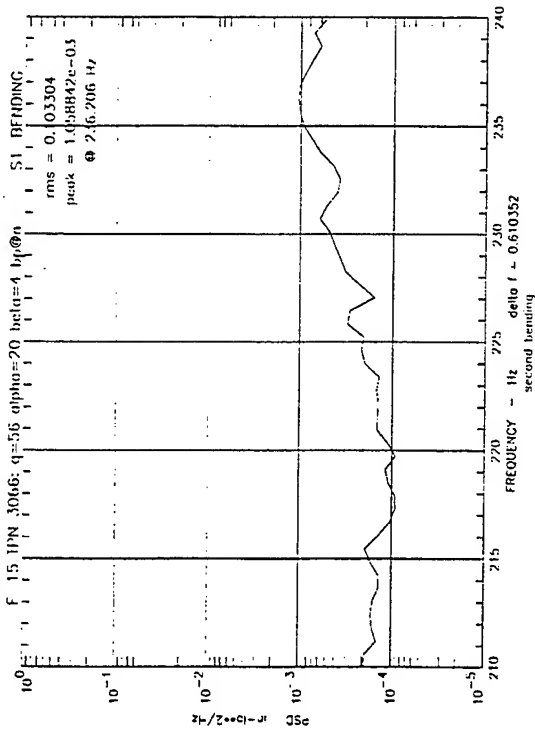
# F-15 Tail Buffet Test



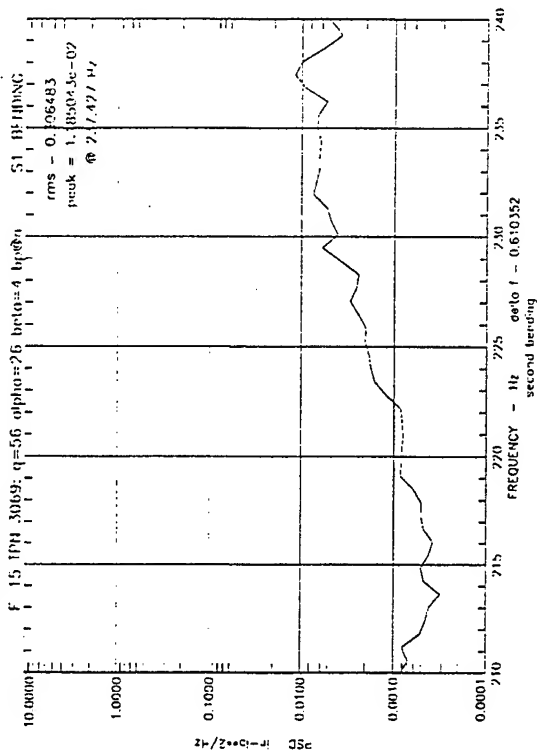




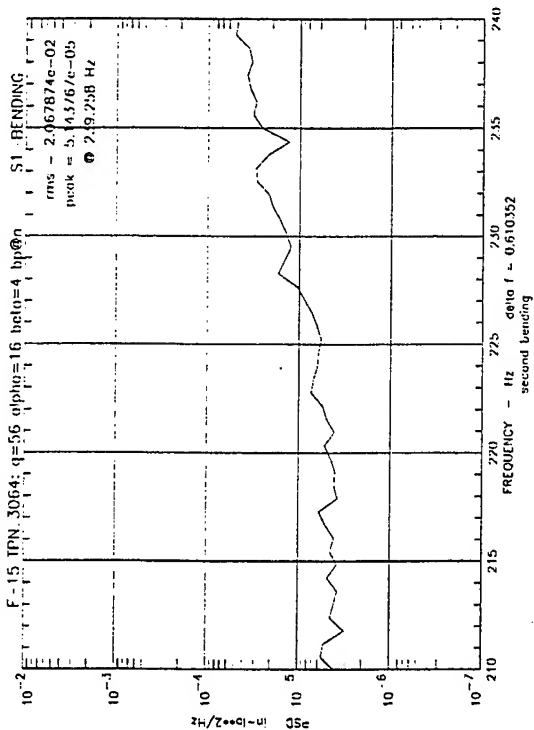
F-15 Tail Buffet Test



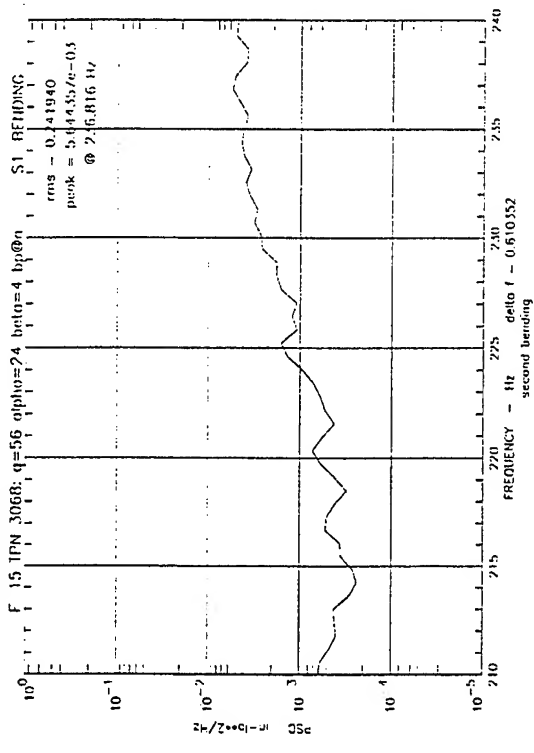
F-15 Tail Buffet Test



F-15 Tail Buffet Test



F-15 Tail Buffet Test



**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION  
PSD GRAPHS**

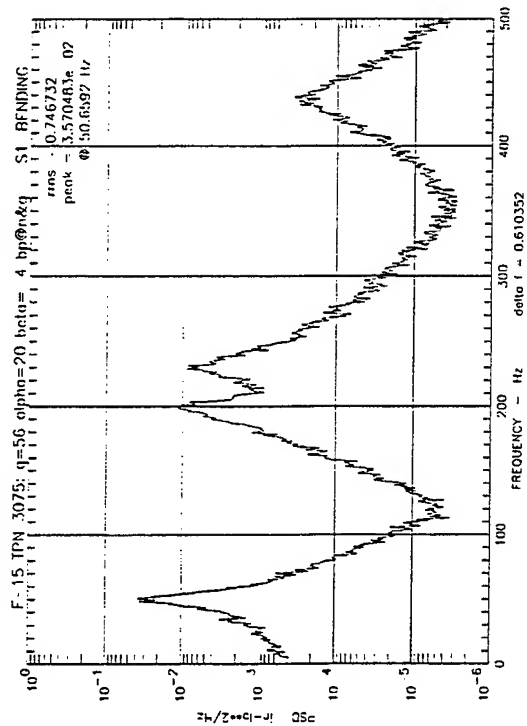
**Q= 56 PSF**

**2.1.1.5 NBP = 87 psi, GBP = 65 psi, BETA= 0, +4, -4, ALPHA = 0....32 Deg**

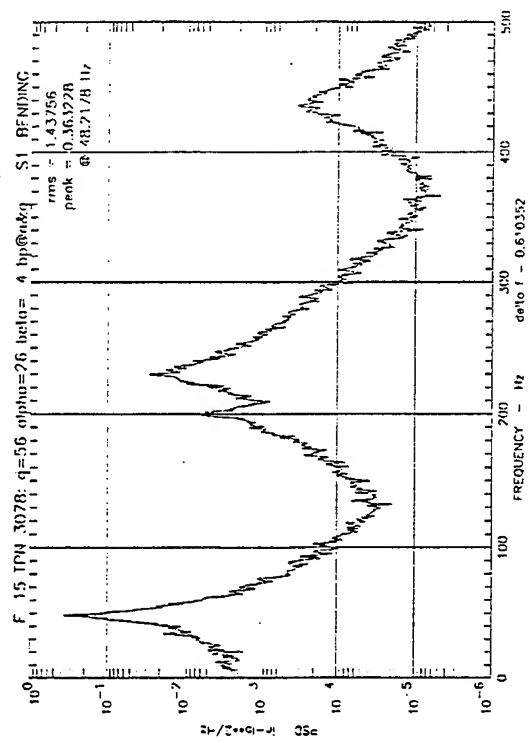
**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION  
PSD GRAPHS**

**2.1.1.5 NBP = 87 psi, GBP = 65 psi, BETA= 0, +4, -4, ALPHA = 0....32 Deg**

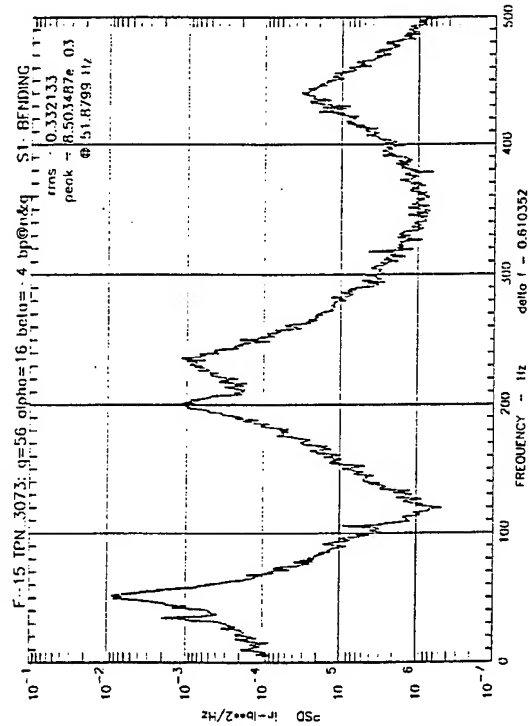
F-15 Tail Buffet Test



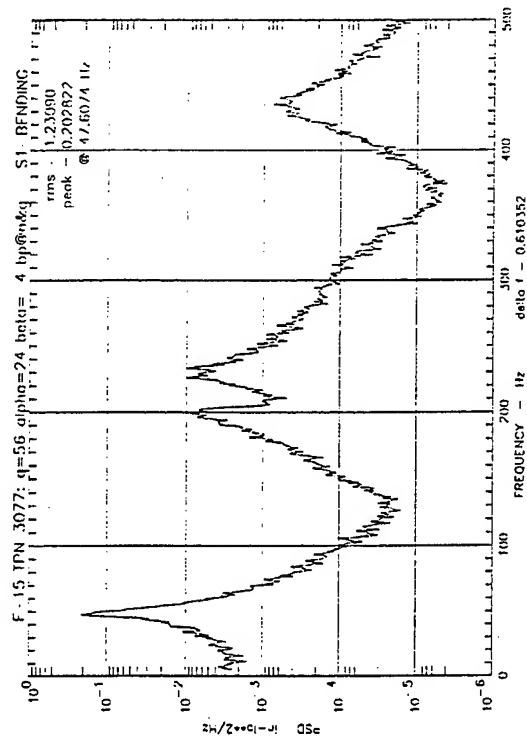
F-15 Tail Buffet Test



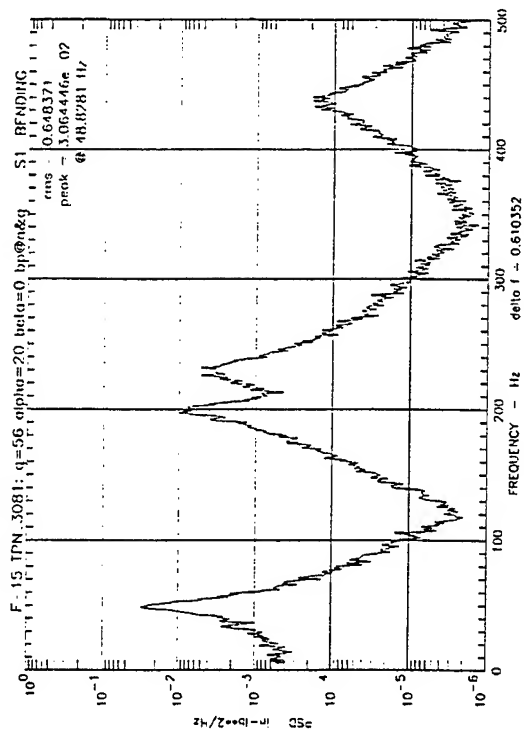
F-15 Tail Buffet Test



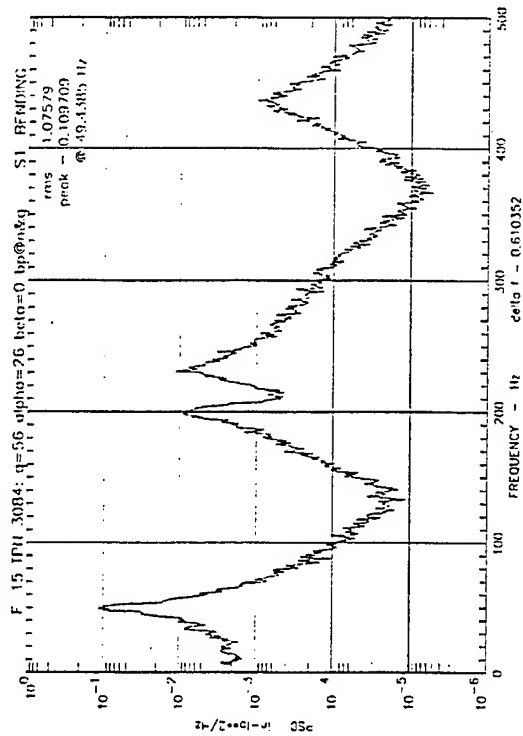
F-15 Tail Buffet Test



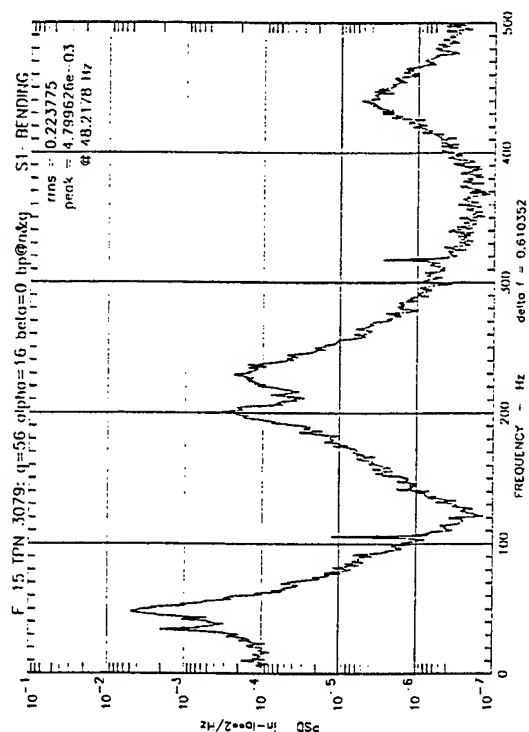
F-15 Tail Buffet Test



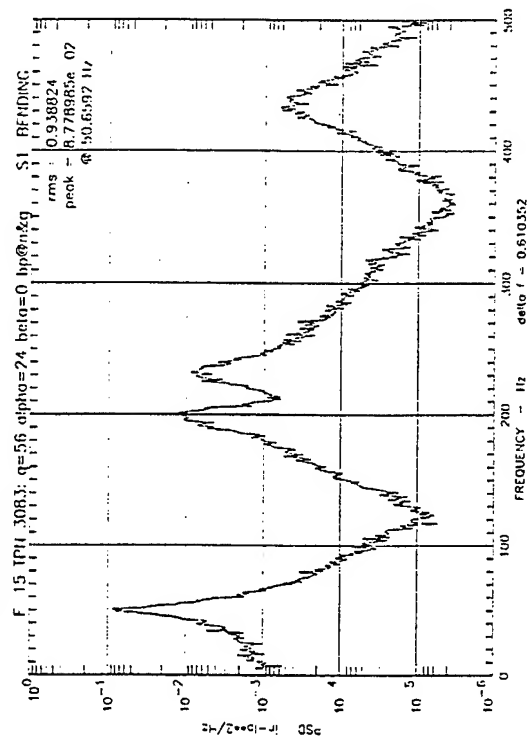
F-15 Tail Buffet Test



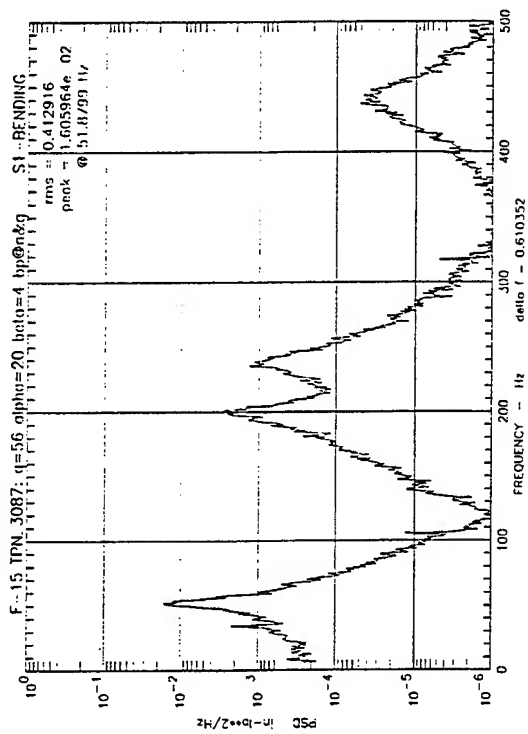
F-15 Tail Buffet Test



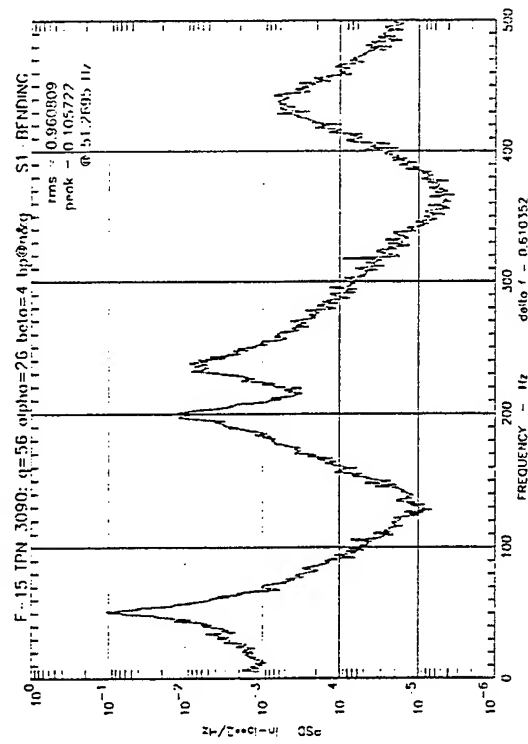
F-15 Tail Buffet Test



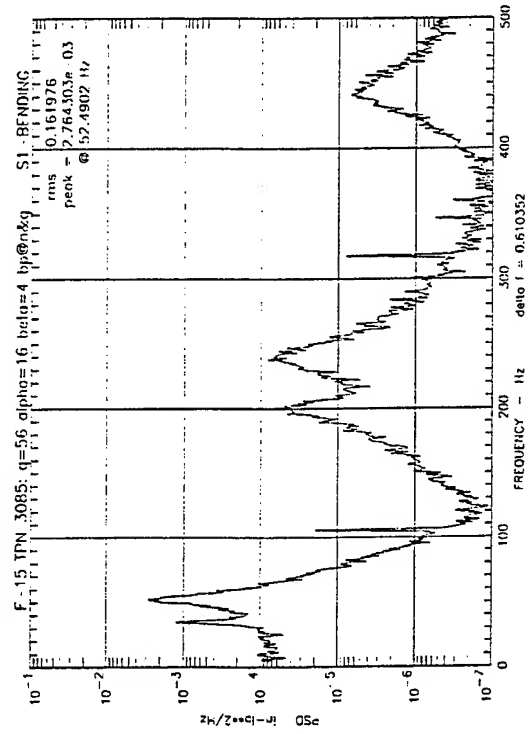
F-15 Tail Buffet Test



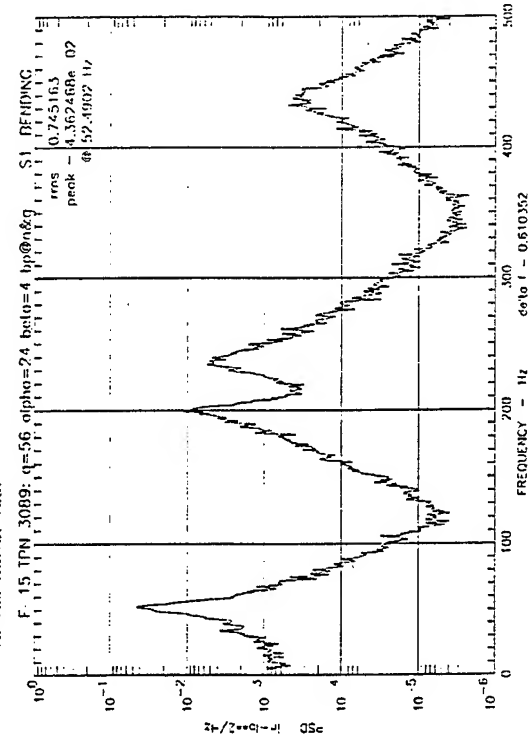
F-15 Tail Buffet Test



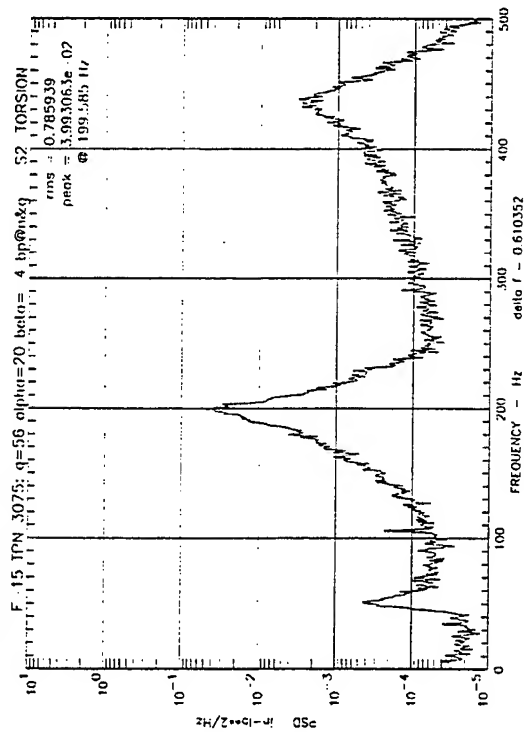
F-15 Tail Buffet Test



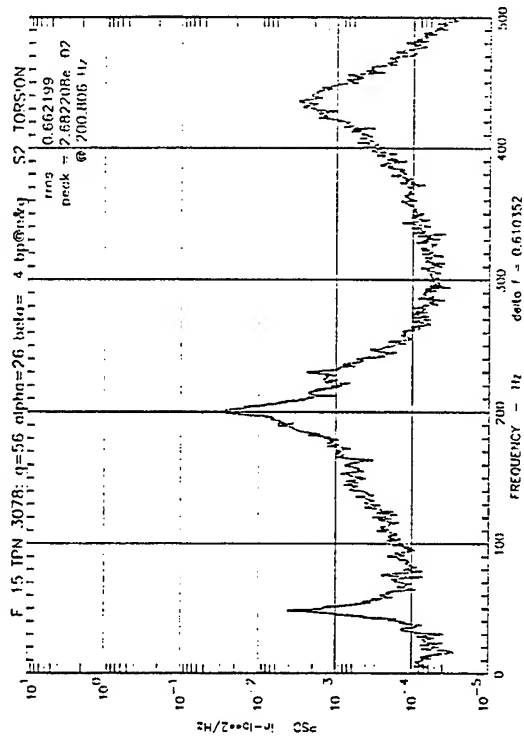
F-15 Tail Buffet Test



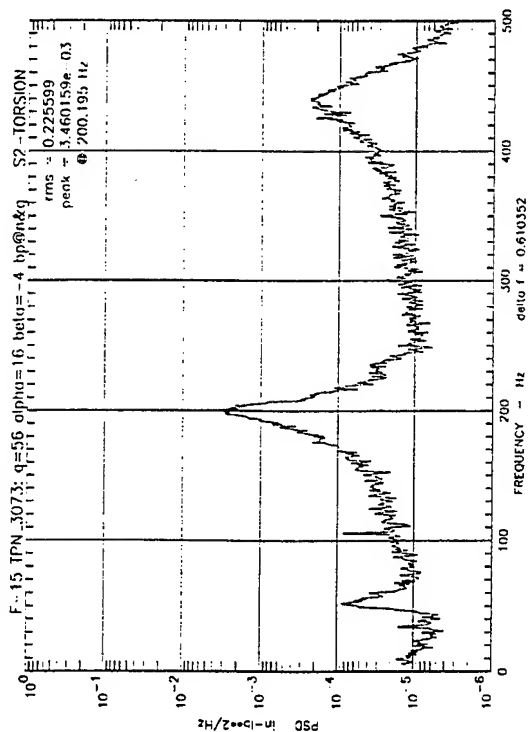
F-15 Tail Buffet Test



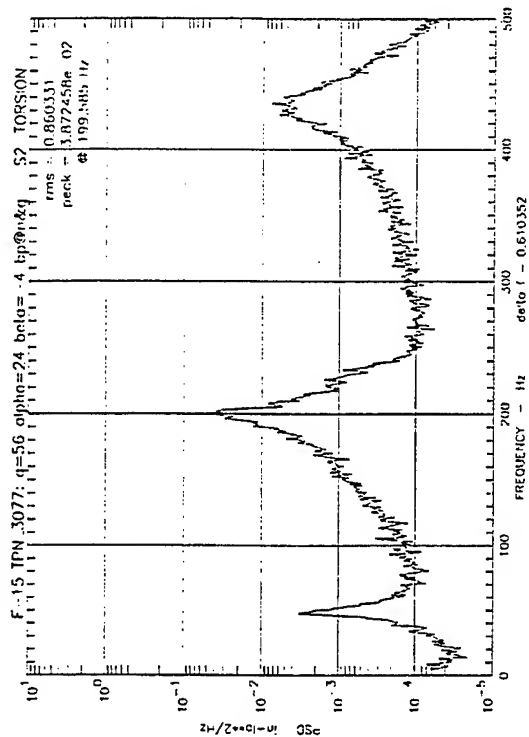
F-15 Tail Buffet Test



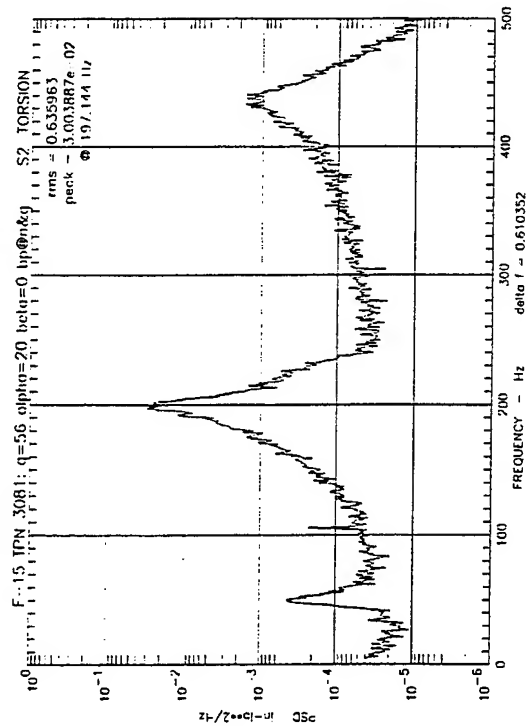
F-15 Tail Buffet Test



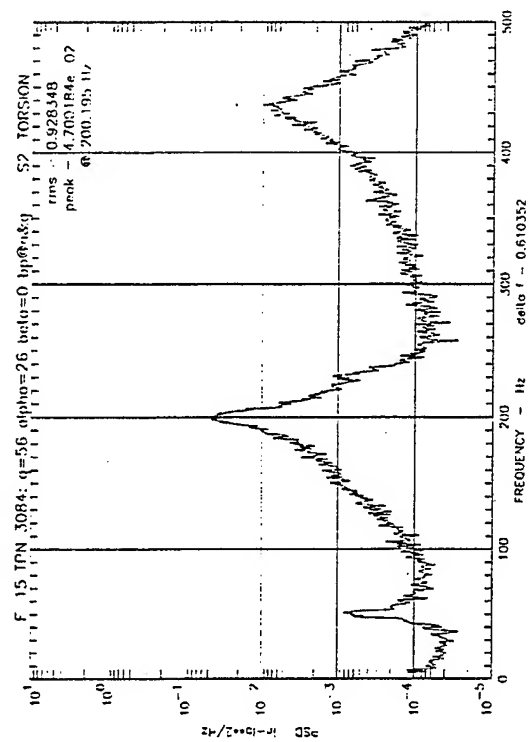
F-15 Tail Buffet Test



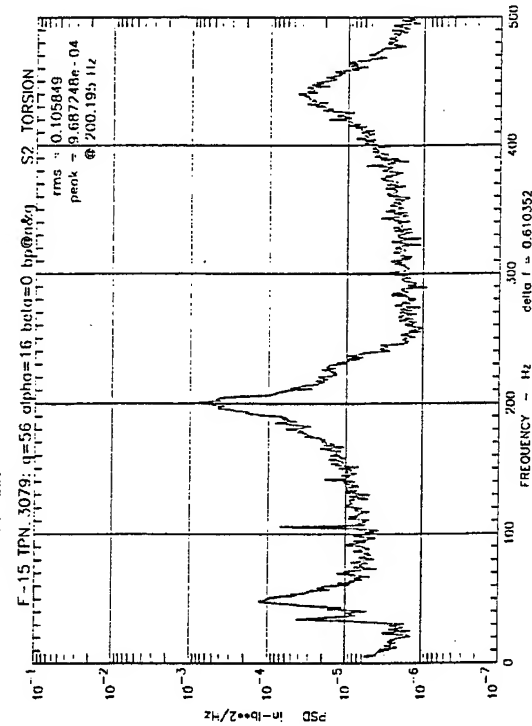
F-15 Tail Buffet Test



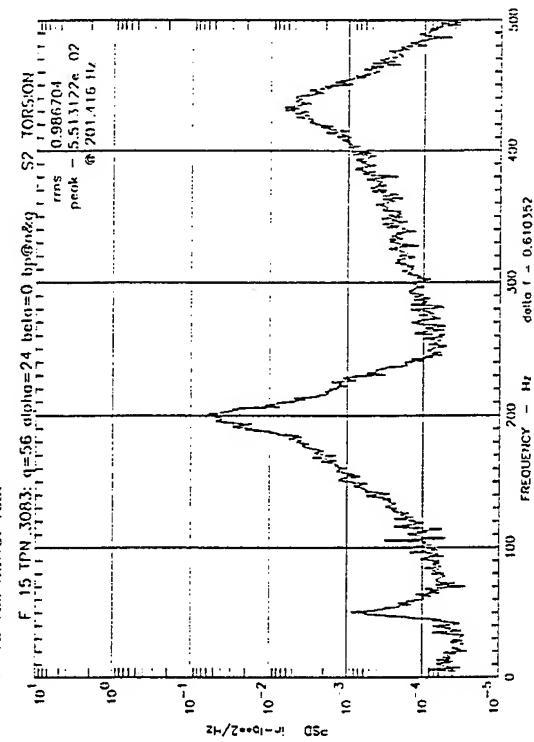
F-15 Tail Buffet Test



F-15 Tail Buffet Test

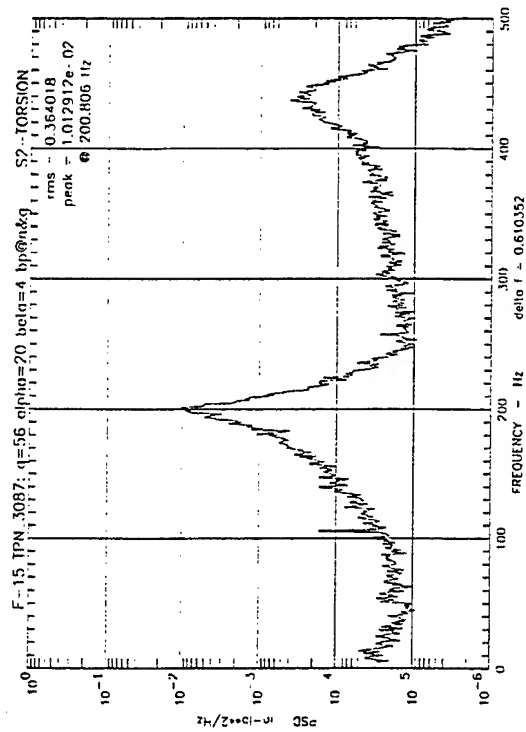


F-15 Tail Buffet Test

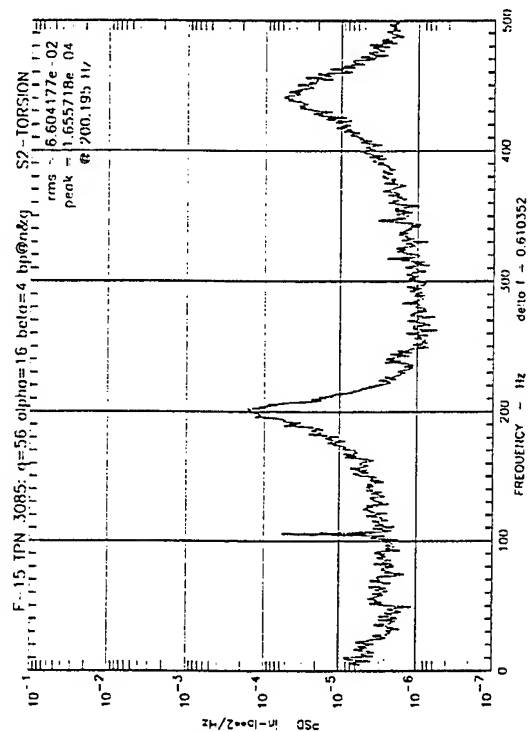




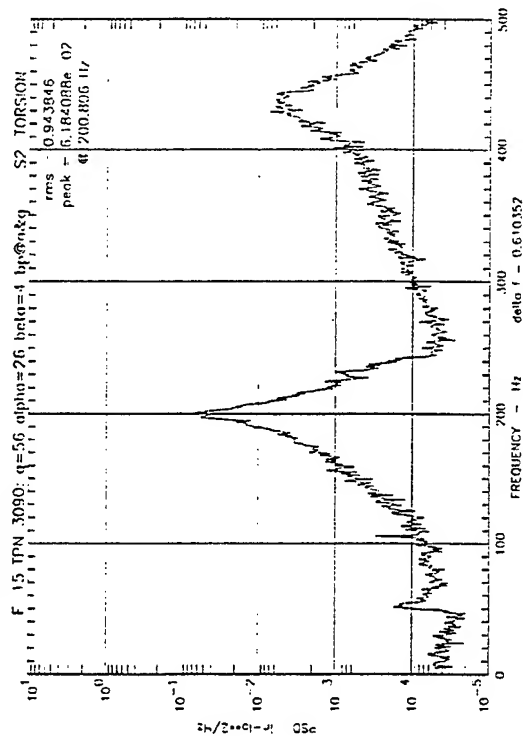
F-15 Tail Buffet Test



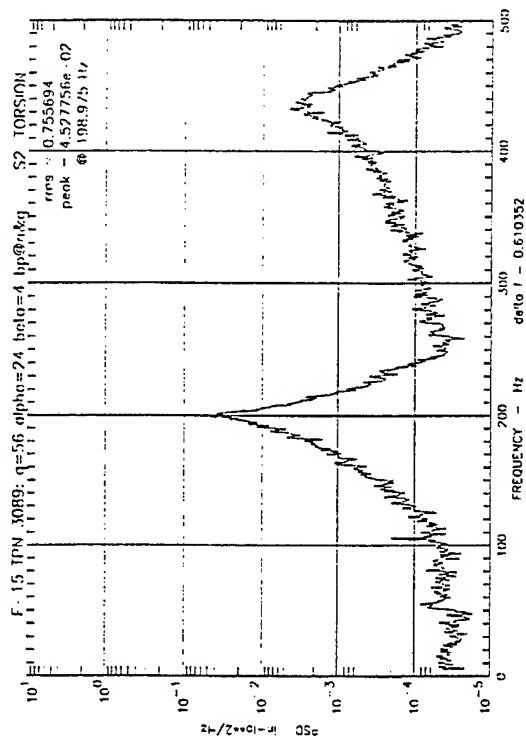
F-15 Tail Buffet Test



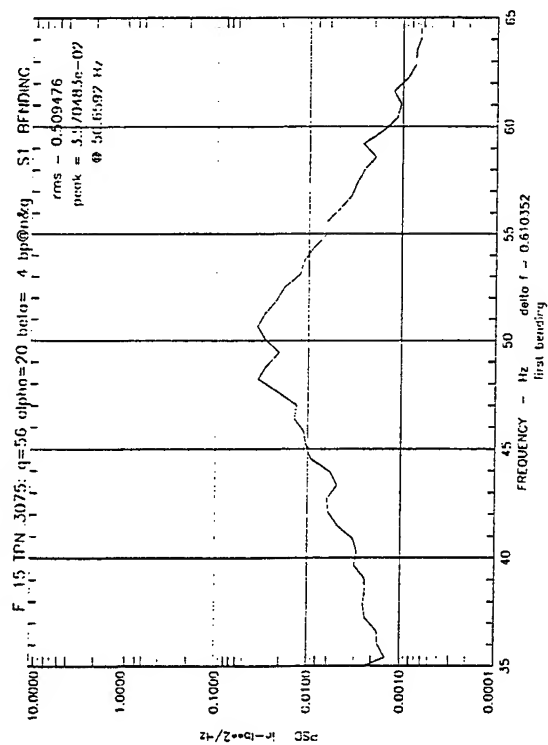
F-15 Tail Buffet Test



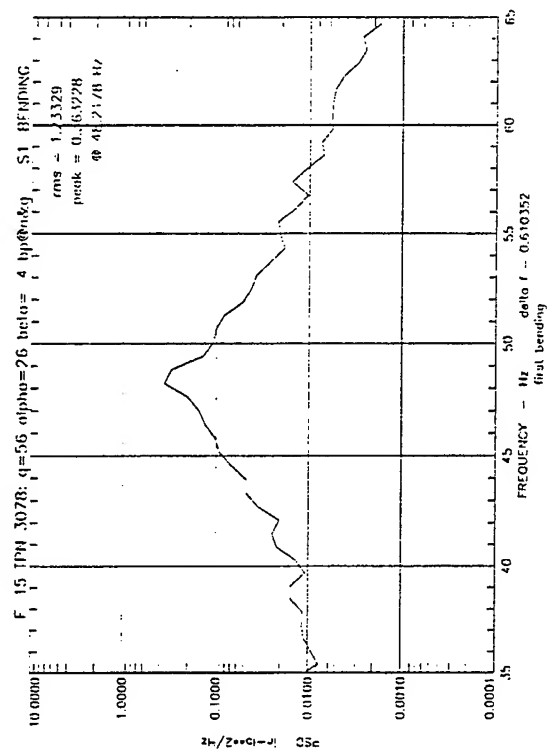
F-15 Tail Buffet Test



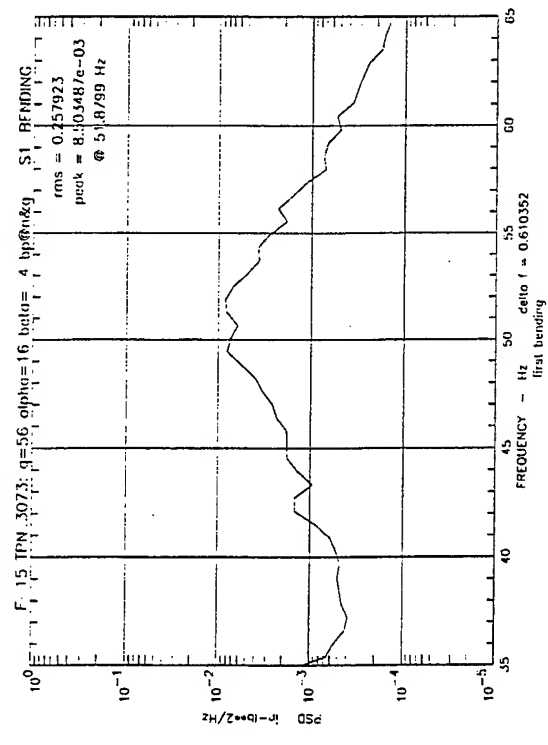
F-15 Tail Buffet Test



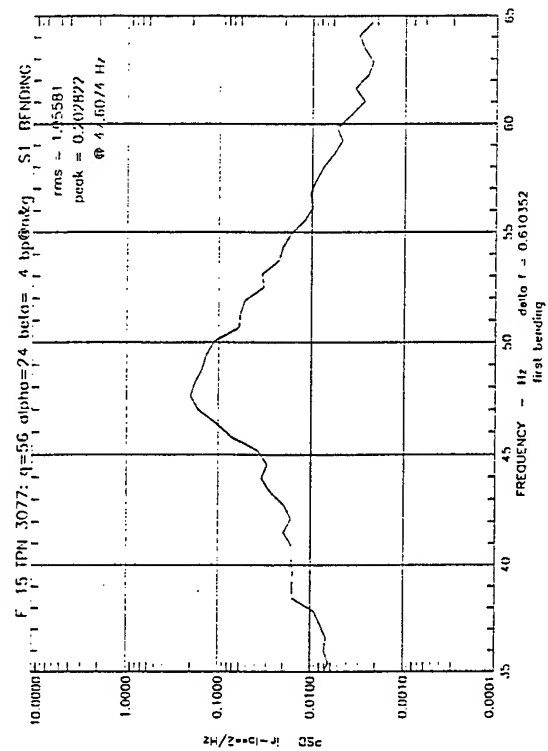
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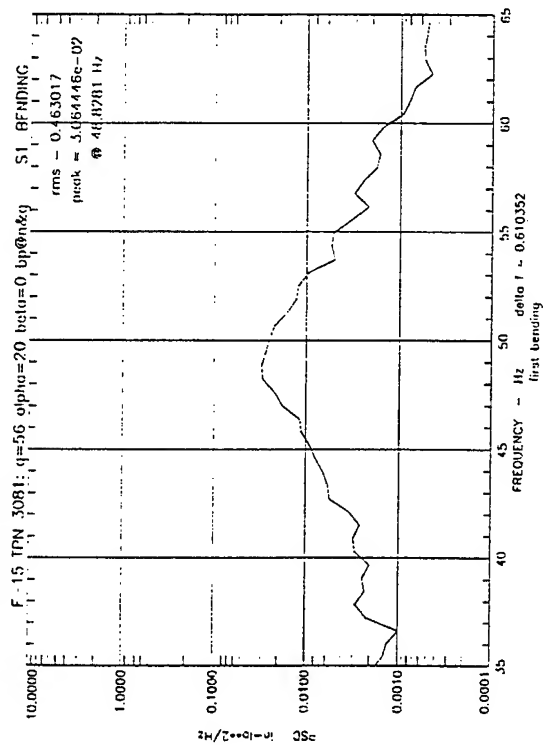
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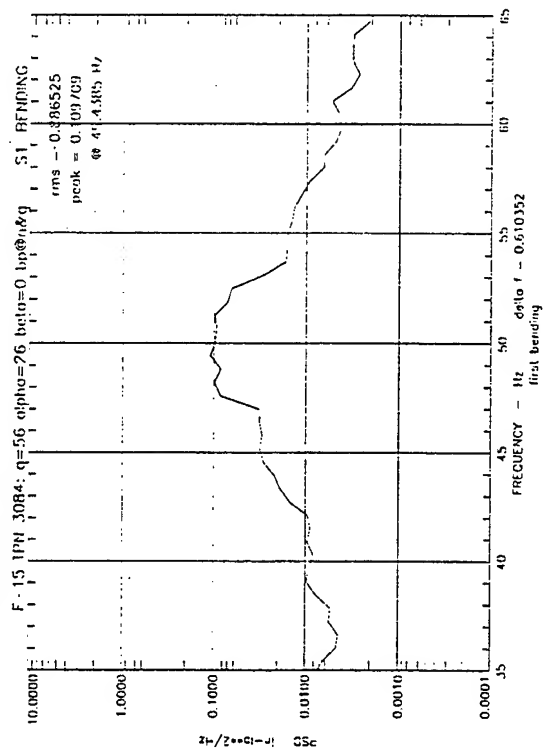
F-15 Tail Buffet Test



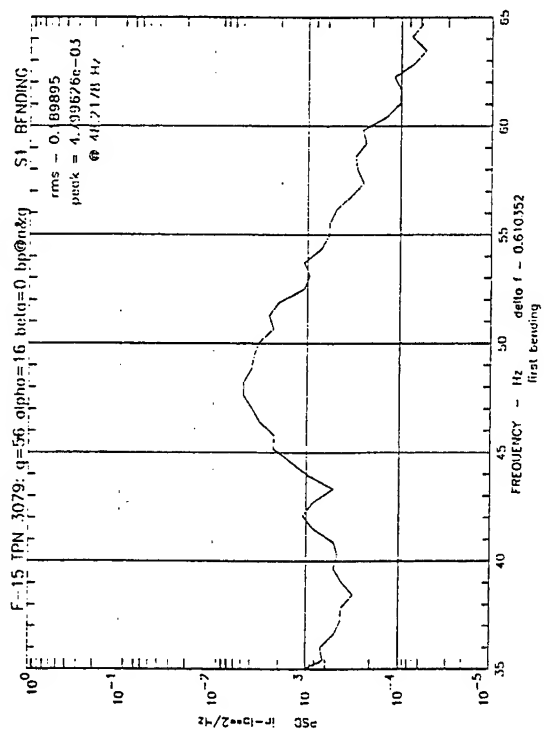
F-15 Tail Buffet Test



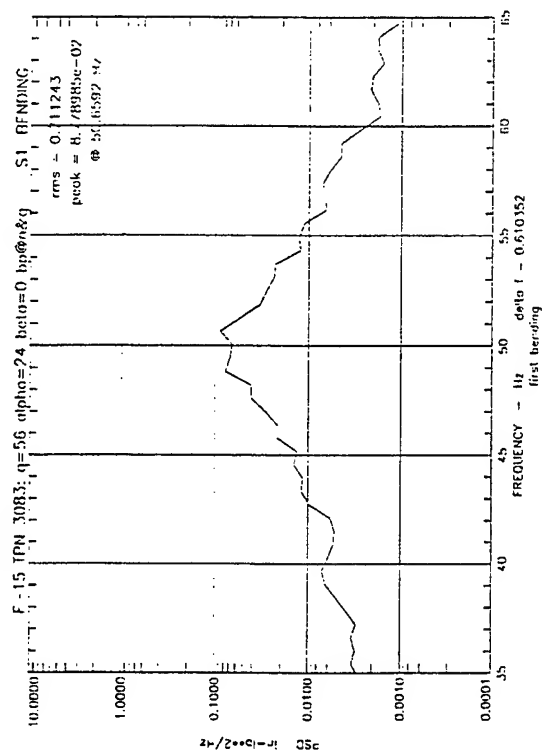
F-15 Tail Buffet Test



F-15 Tail Buffet Test

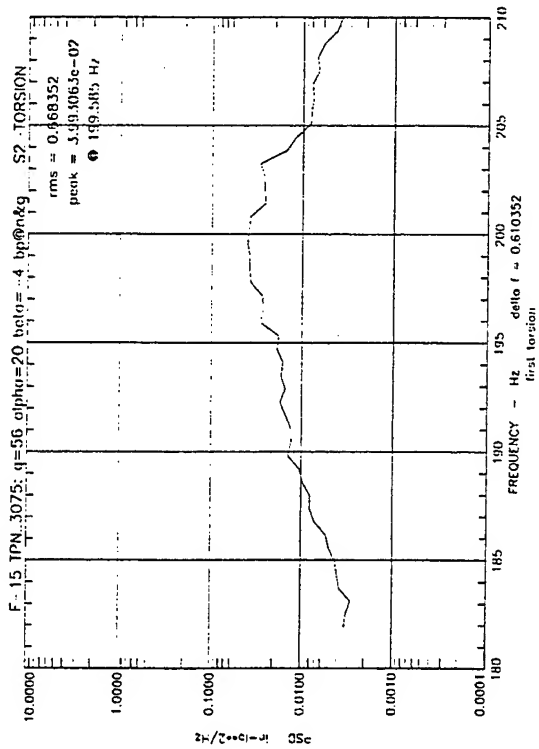


F-15 Tail Buffet Test

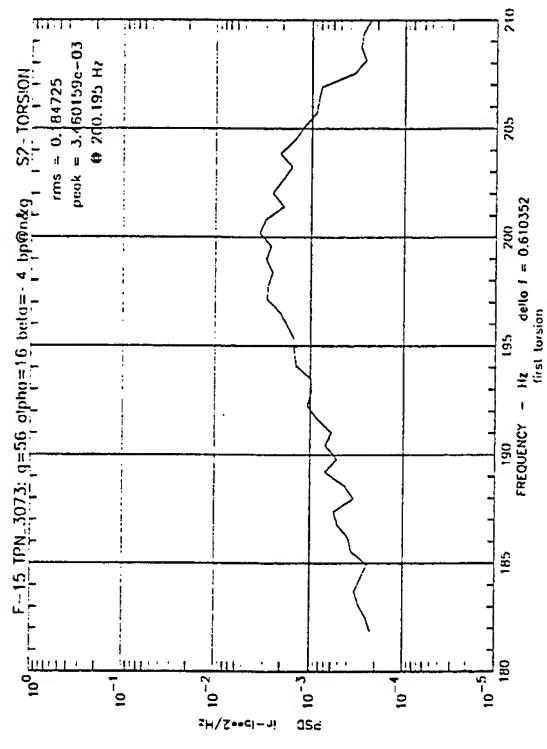




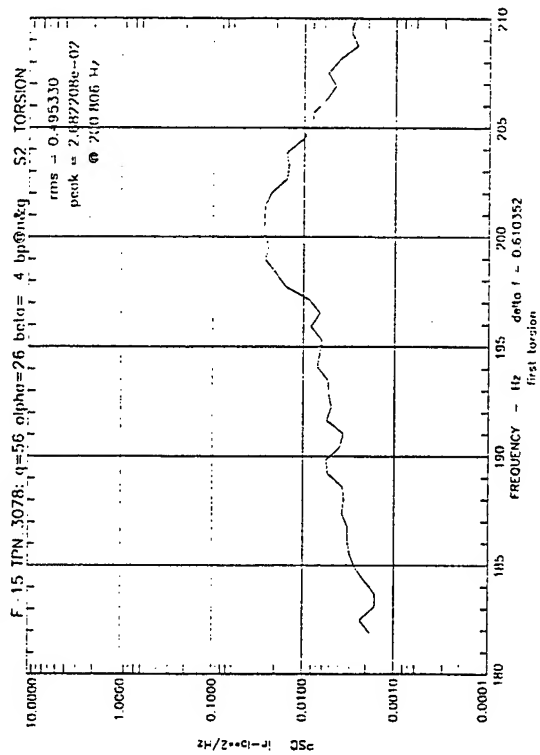
# F-15 Tail Buffet Test



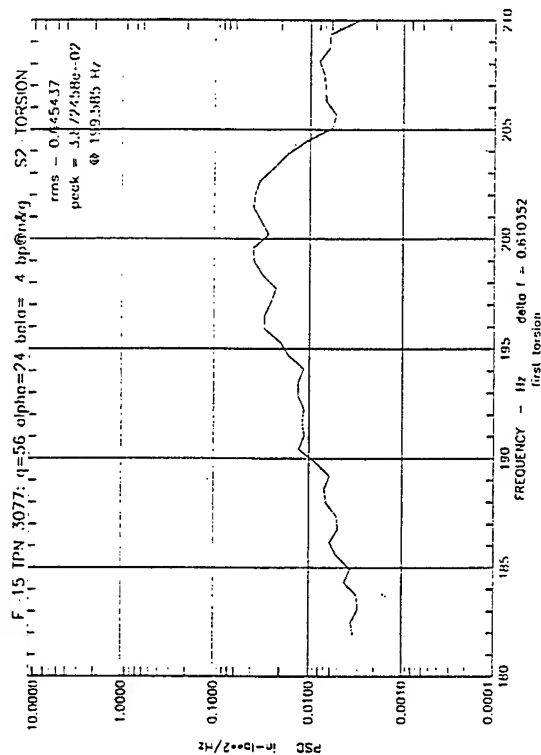
# F-15 Tail Buffet Test



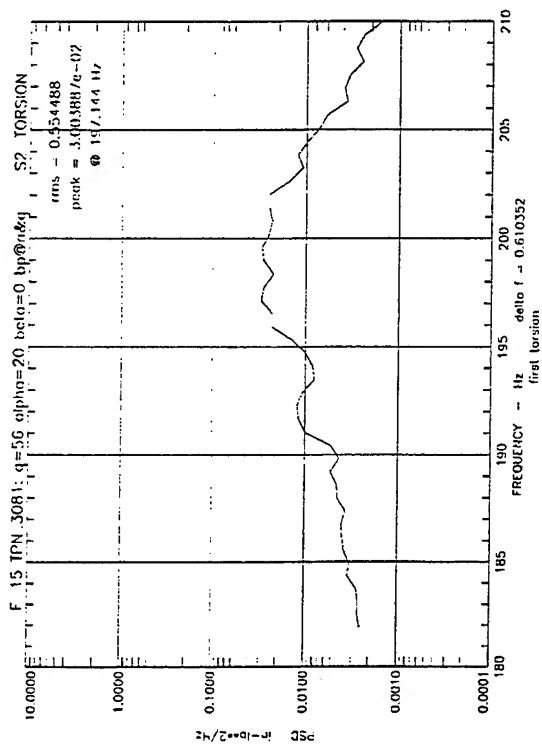
# F-15 Tail Buffet Test



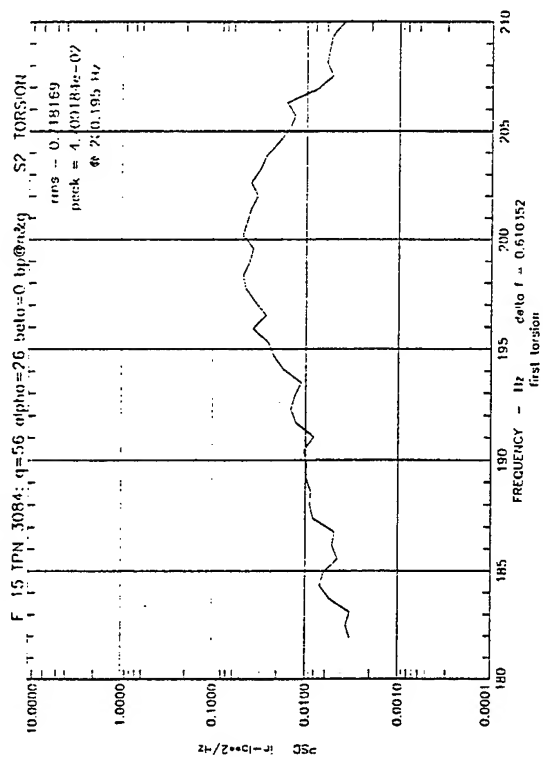
# F-15 Tail Buffet Test



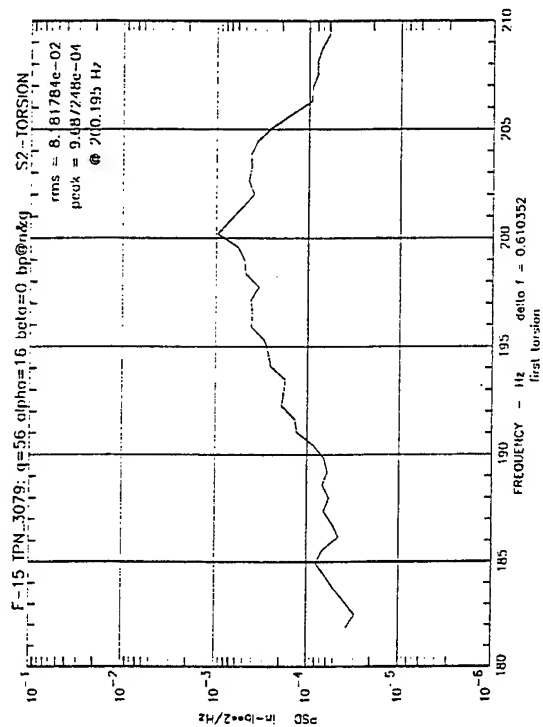
F-15 Tail Buffet Test



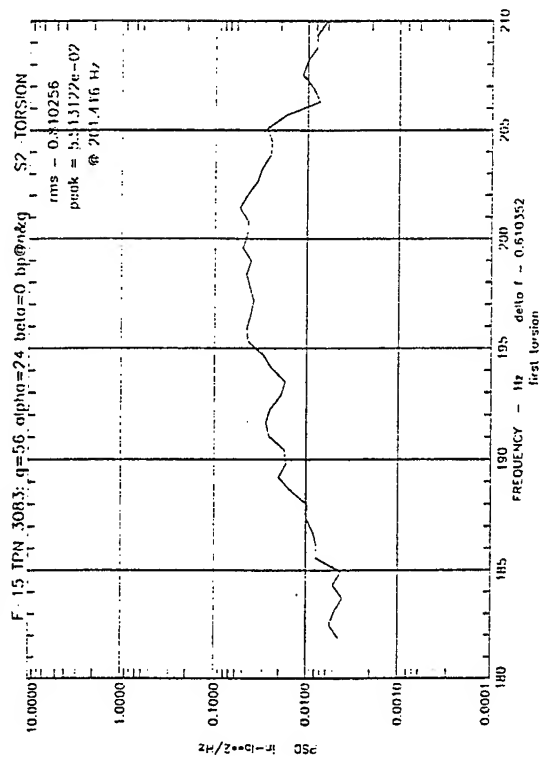
F-15 Tail Buffet Test



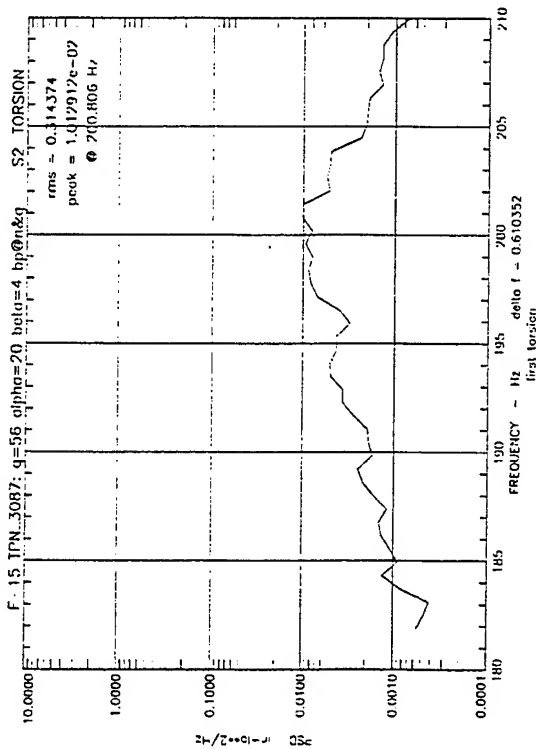
F-15 Tail Buffet Test



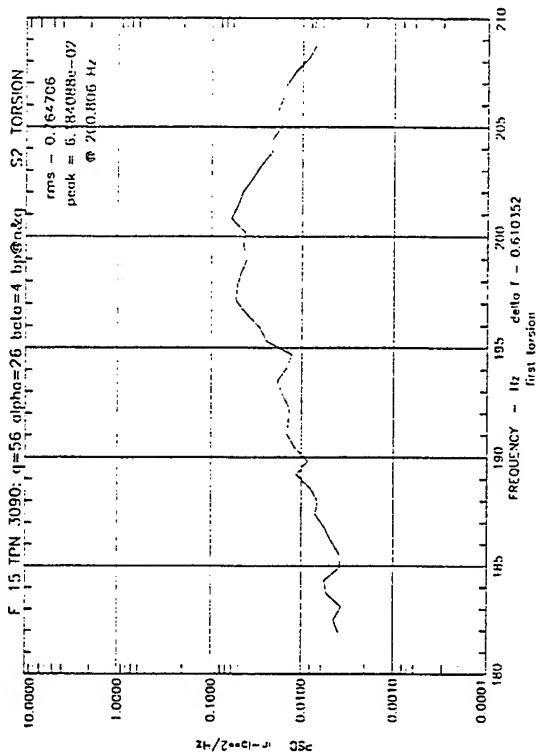
F-15 Tail Buffet Test



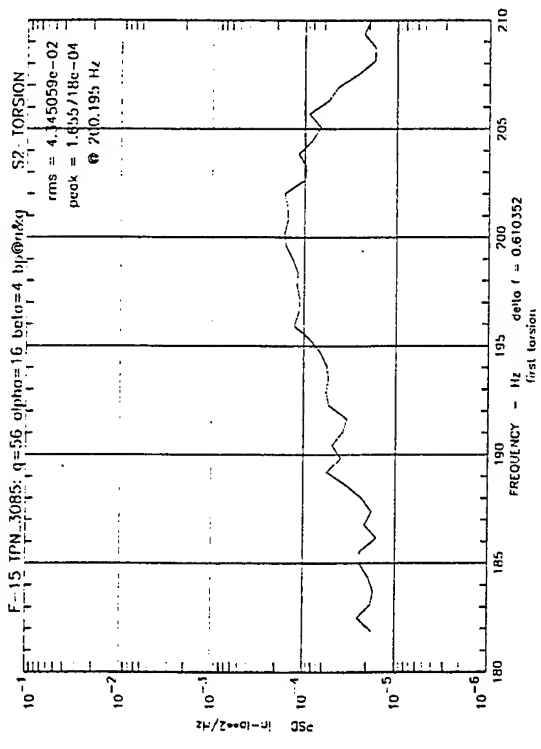
F-15 Tail Buffet Test



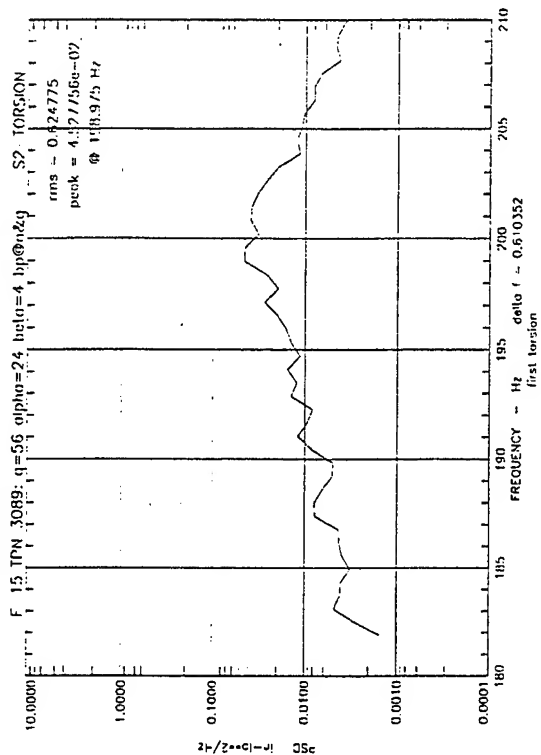
F-15 Tail Buffet Test



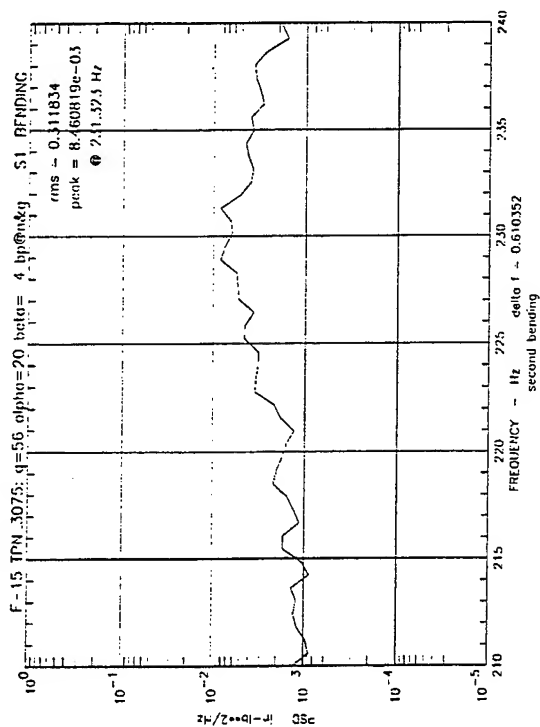
F-15 Tail Buffet Test



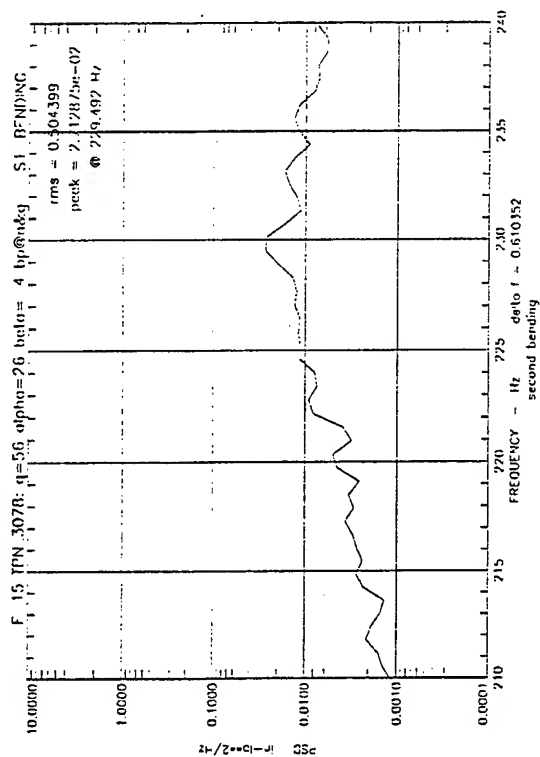
F-15 Tail Buffet Test



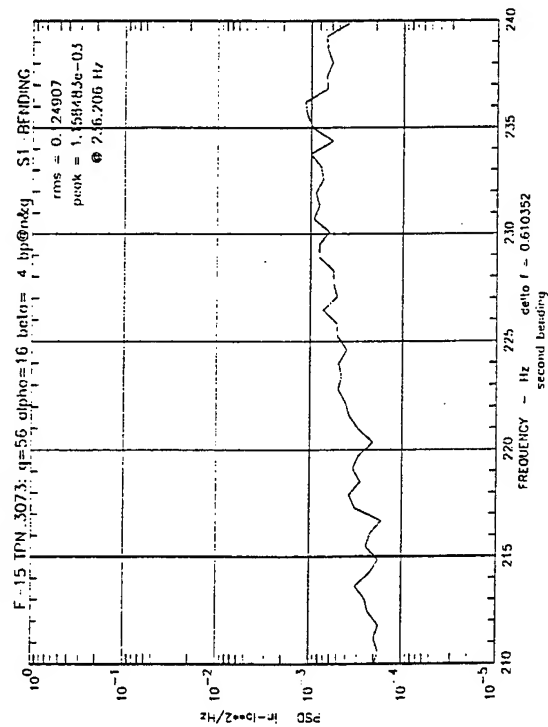
F-15 Tail Buffet Test



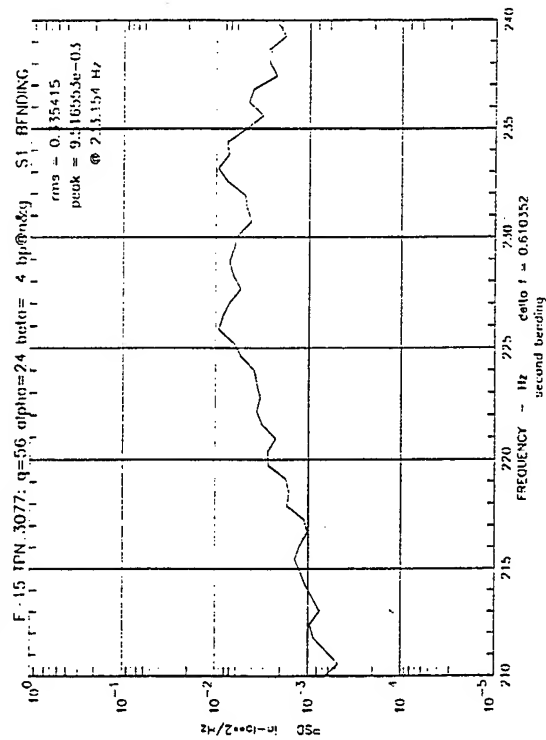
F-15 Tail Buffet Test



F-15 Tail Buffet Test

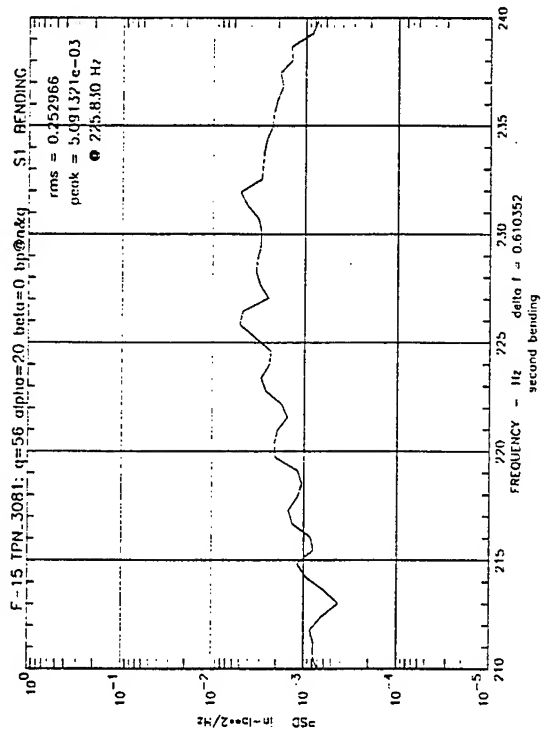


F-15 Tail Buffet Test

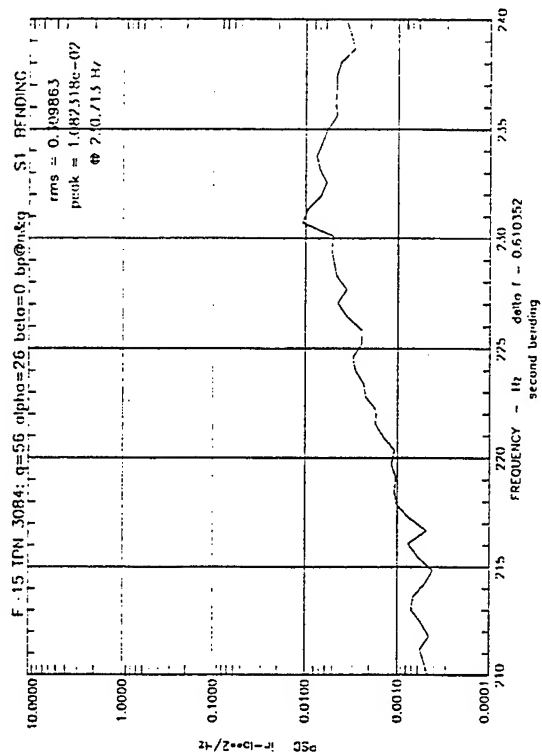




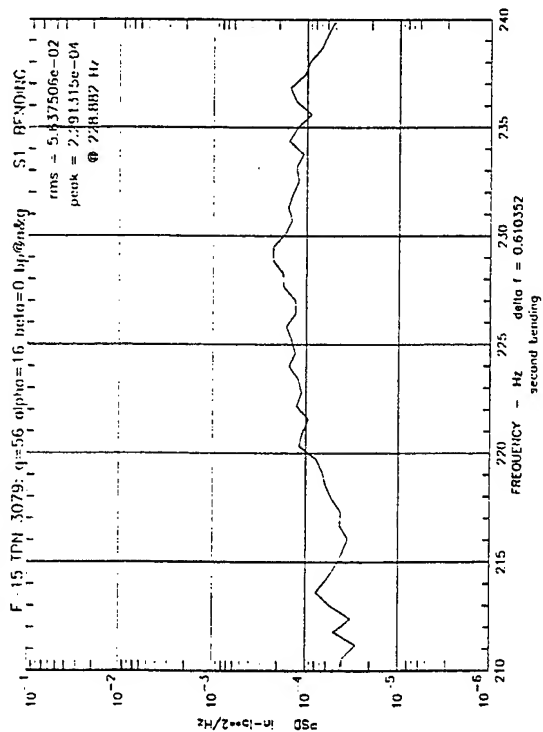
F-15 Tail Buffet Test



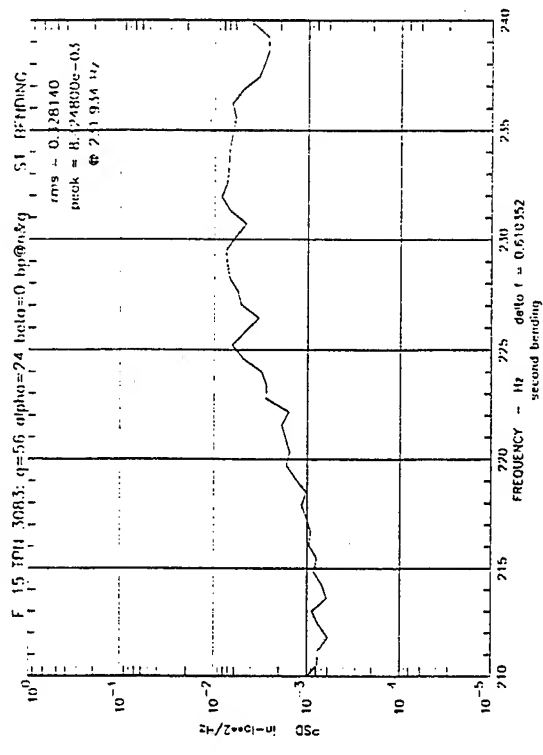
F-15 Tail Buffet Test



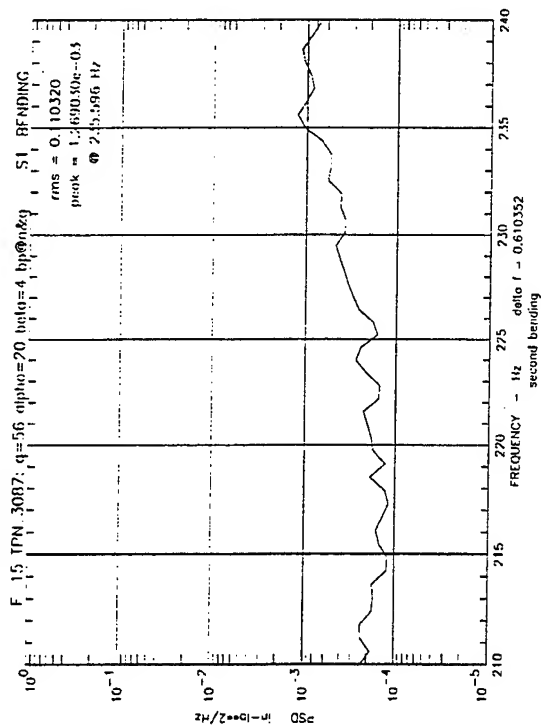
F-15 Tail Buffet Test



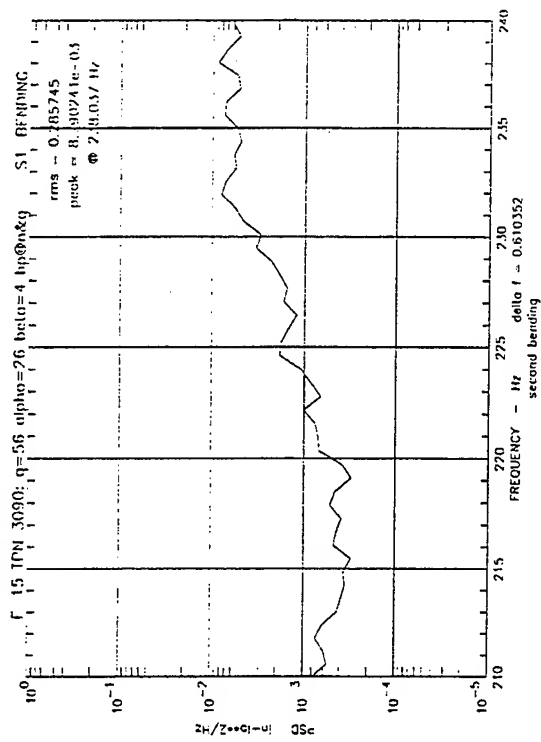
F-15 Tail Buffet Test



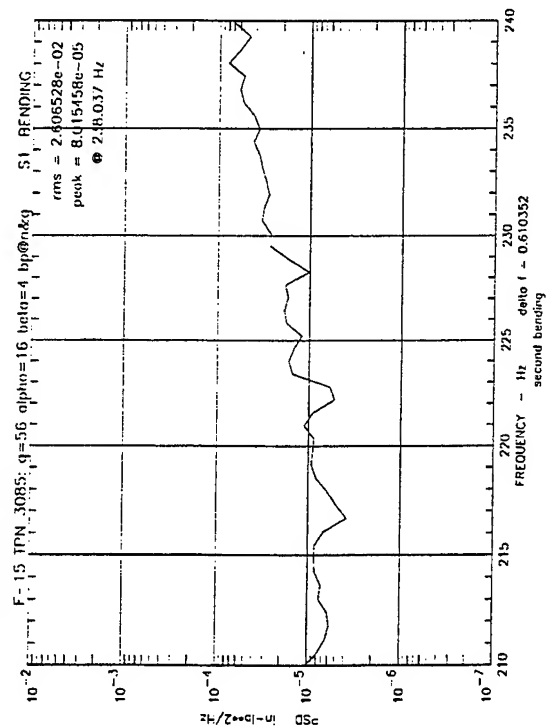
F-15 Tail Buffet Test



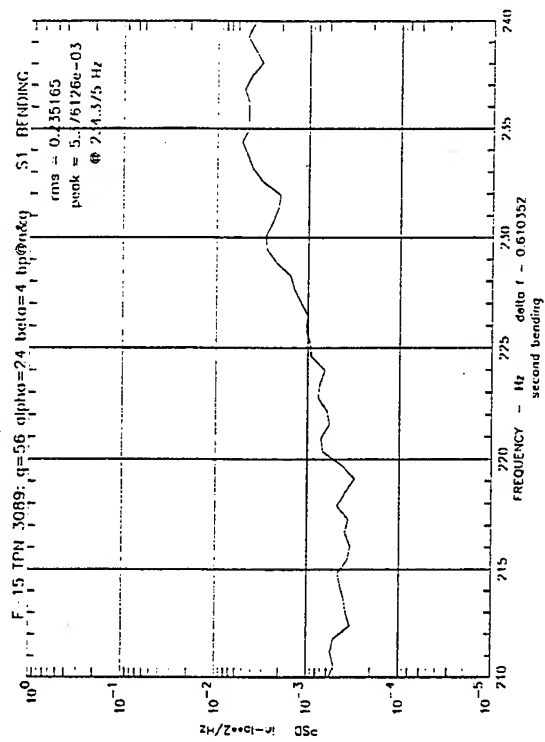
F-15 Tail Buffet Test



F-15 Tail Buffet Test



F-15 Tail Buffet Test

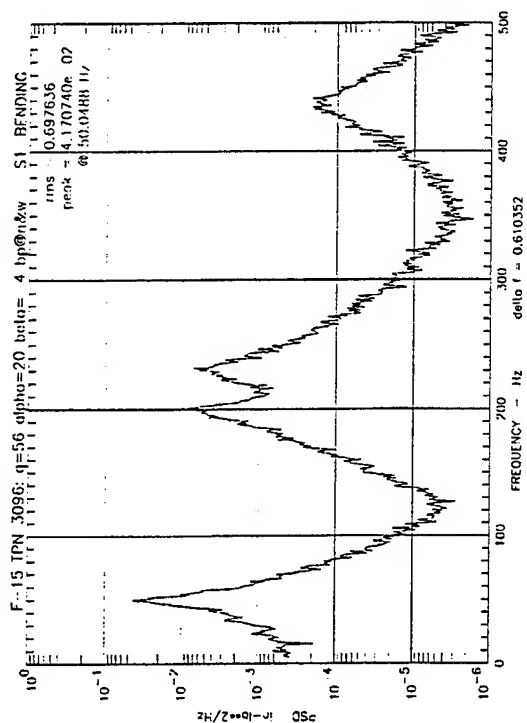


**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION  
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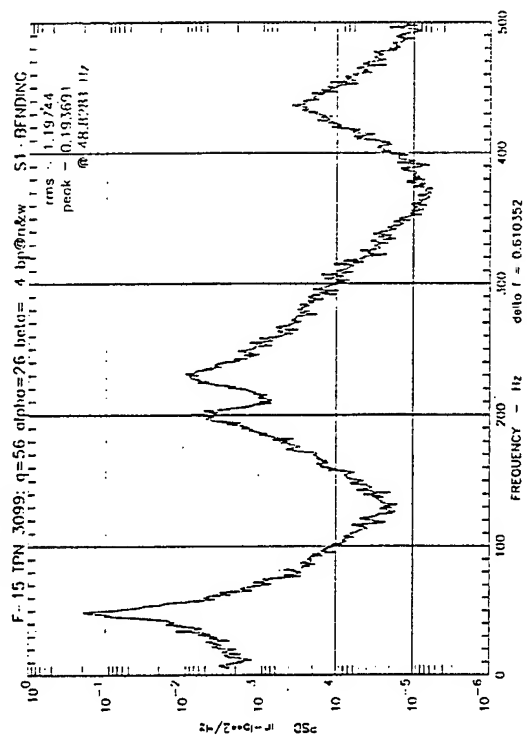
**Q= 56 PSF**

**2.1.1.6 NBP = 87 psi, WBP = 65 psi, BETA= 0, +4, -4, ALPHA = 0....32 Deg**

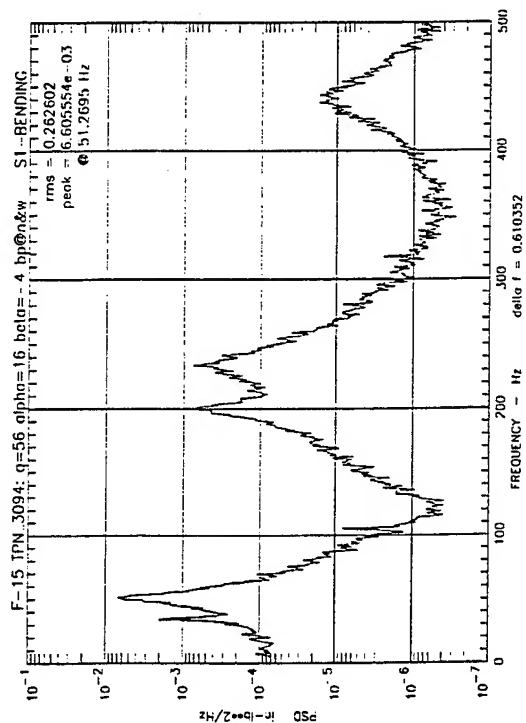
F-15 Tail Buffet Test



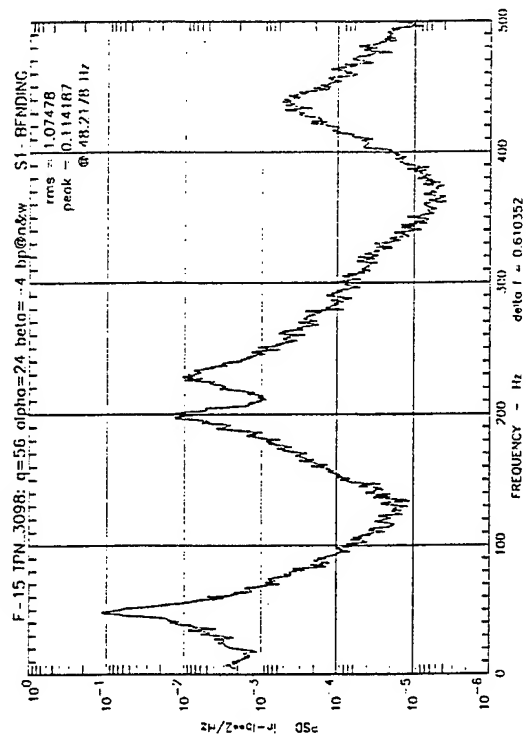
F-15 Tail Buffet Test



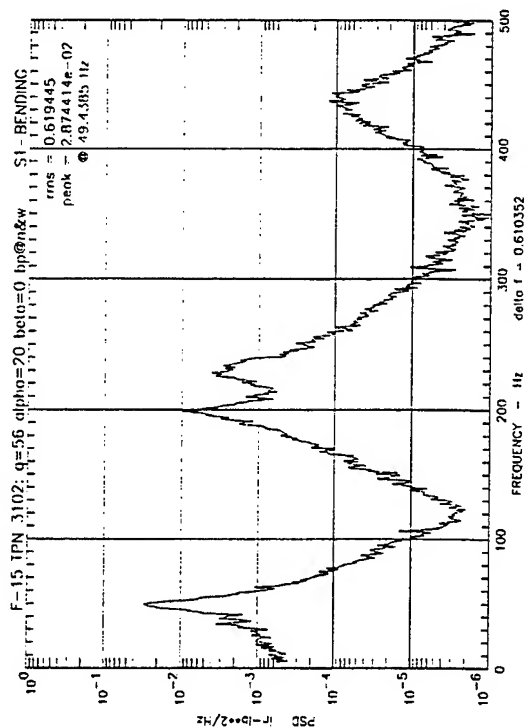
F-15 Tail Buffet Test



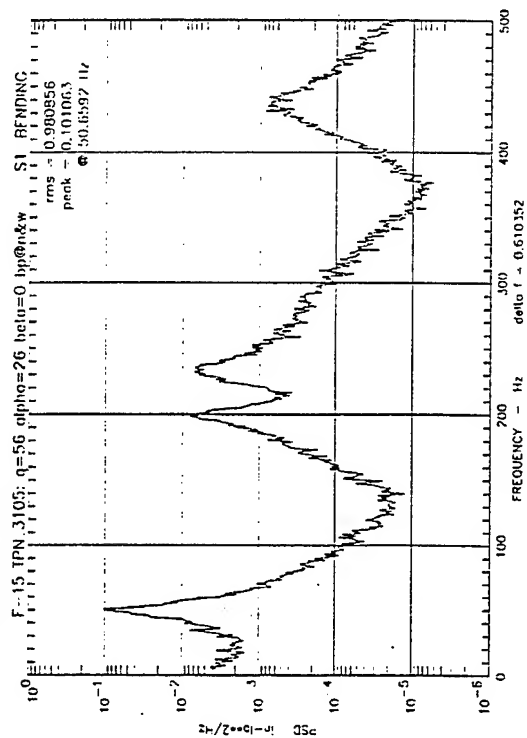
F-15 Tail Buffet Test



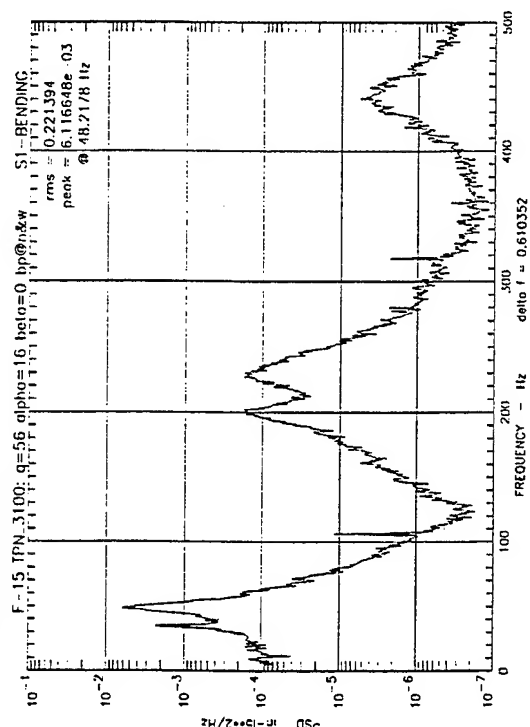
F-15 Tail Buffet Test



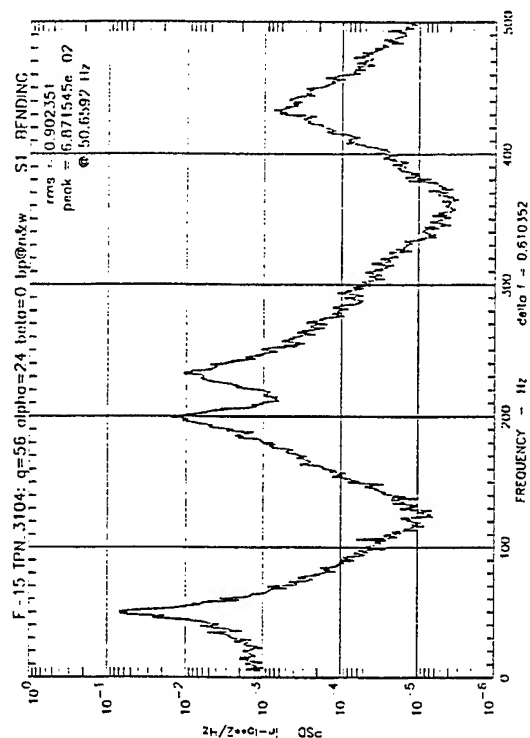
F-15 Tail Buffet Test



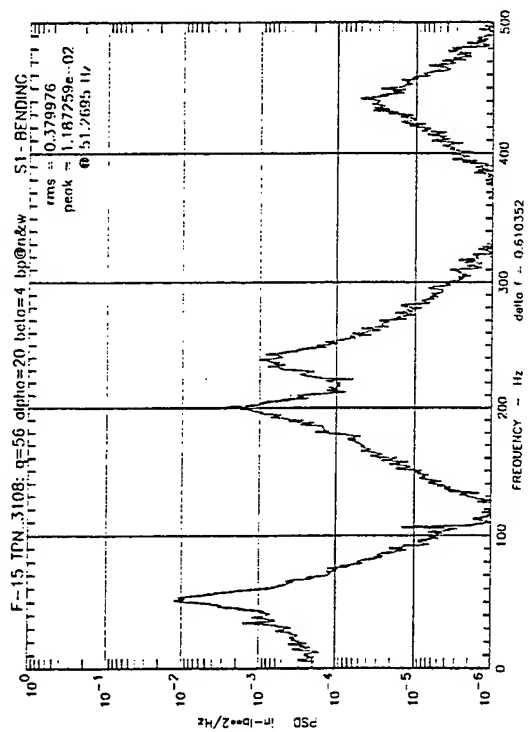
F-15 Tail Buffet Test



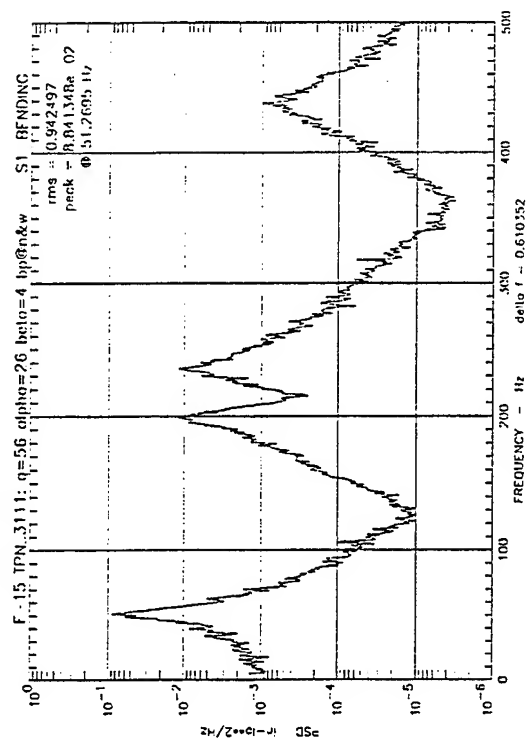
F-15 Tail Buffet Test



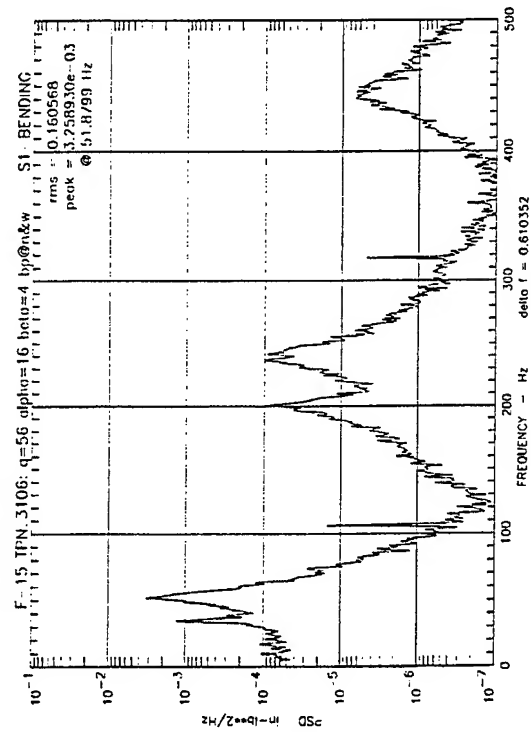
F-15 Tail Buffet Test



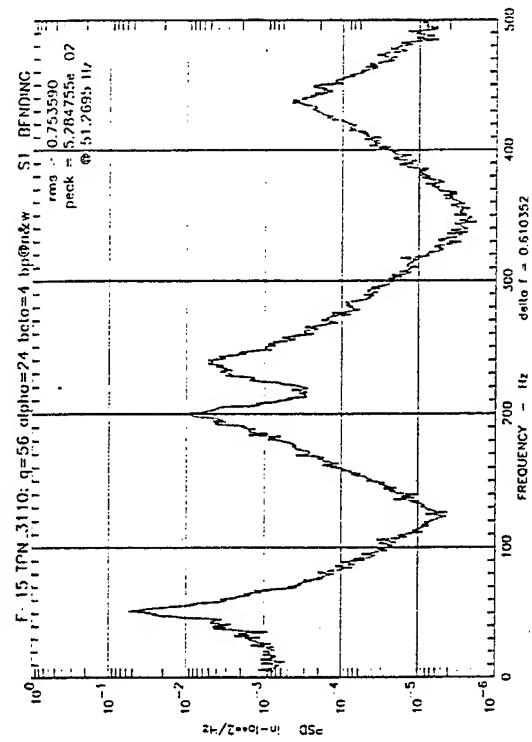
F-15 Tail Buffet Test



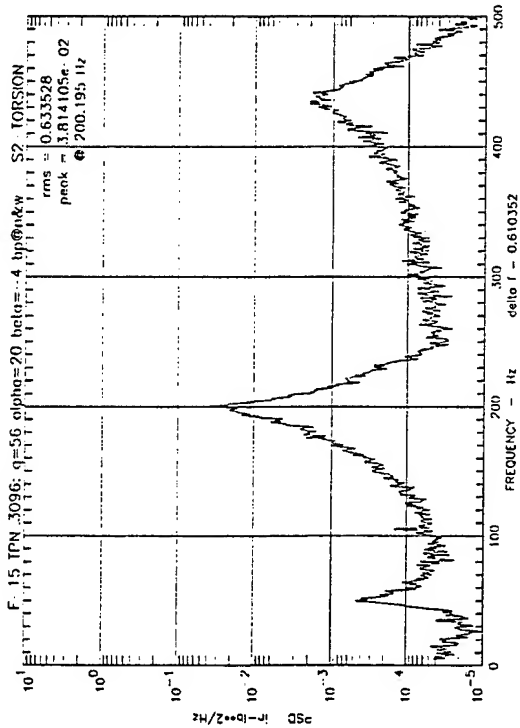
F-15 Tail Buffet Test



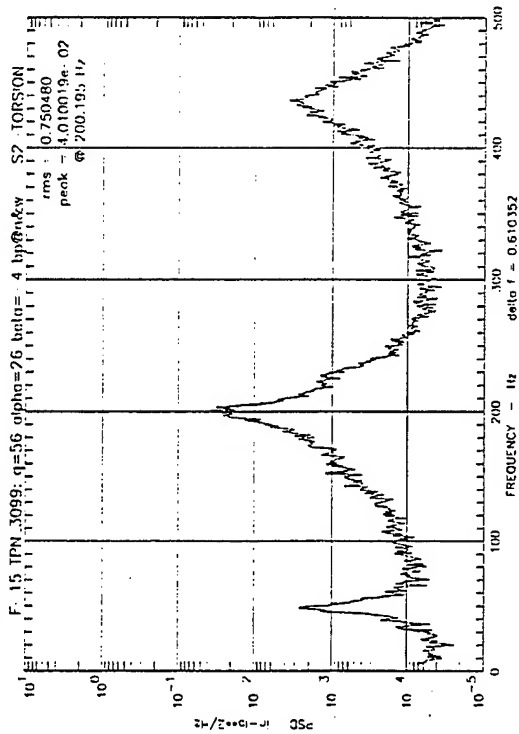
F-15 Tail Buffet Test



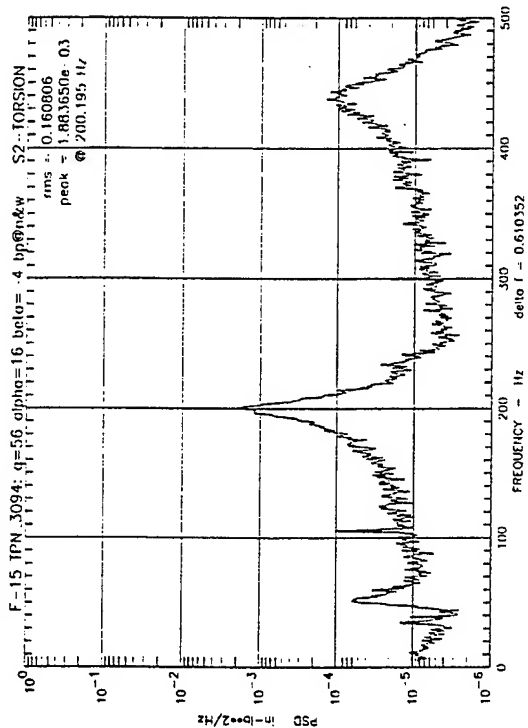
F-15 Tail Buffet Test



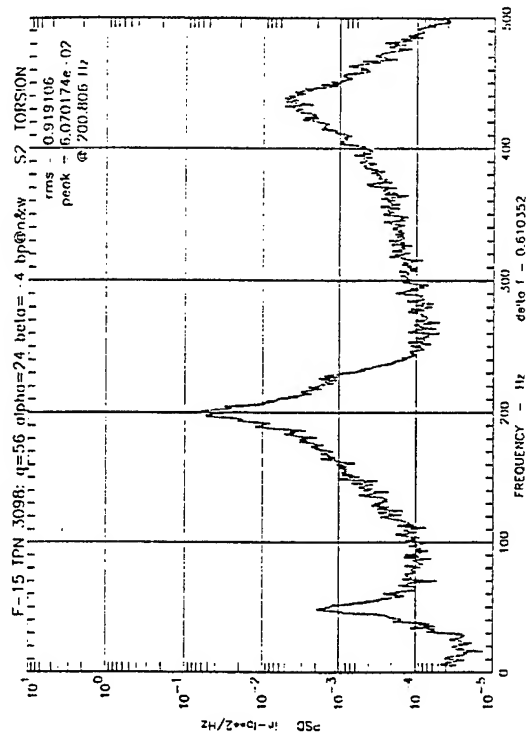
F-15 Tail Buffet Test



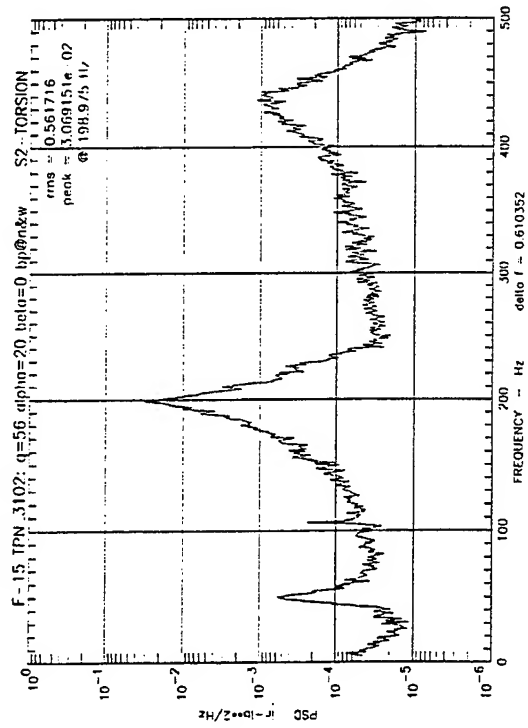
F-15 Tail Buffet Test



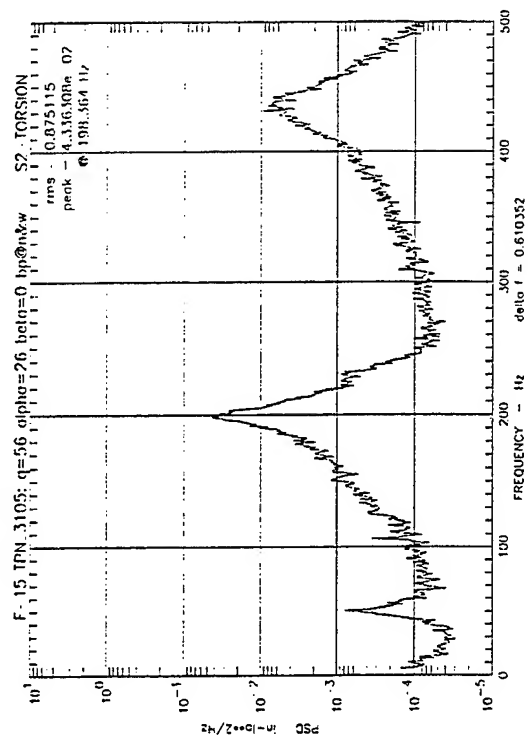
F-15 Tail Buffet Test



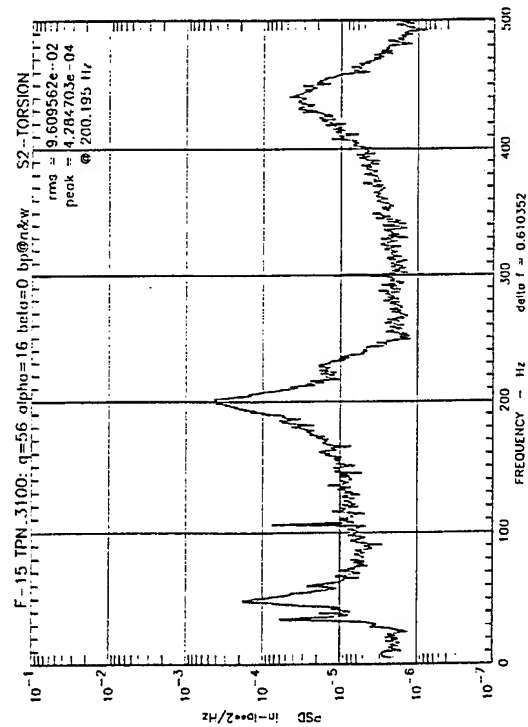
F-15 Tail Buffet Test



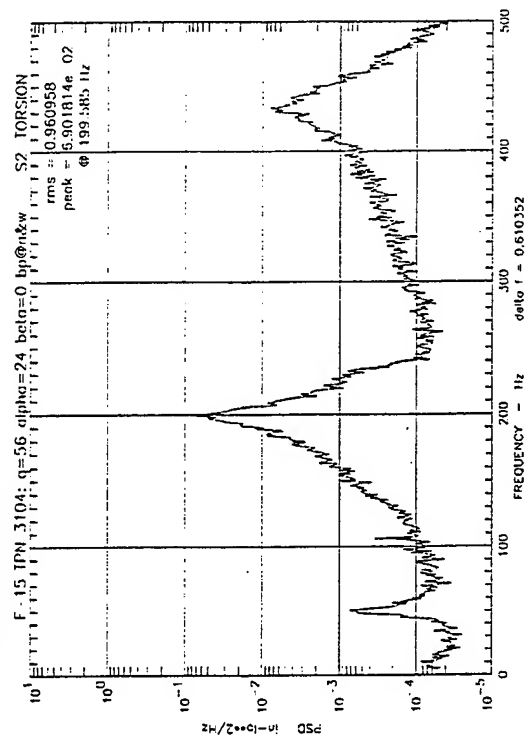
F-15 Tail Buffet Test



F-15 Tail Buffet Test

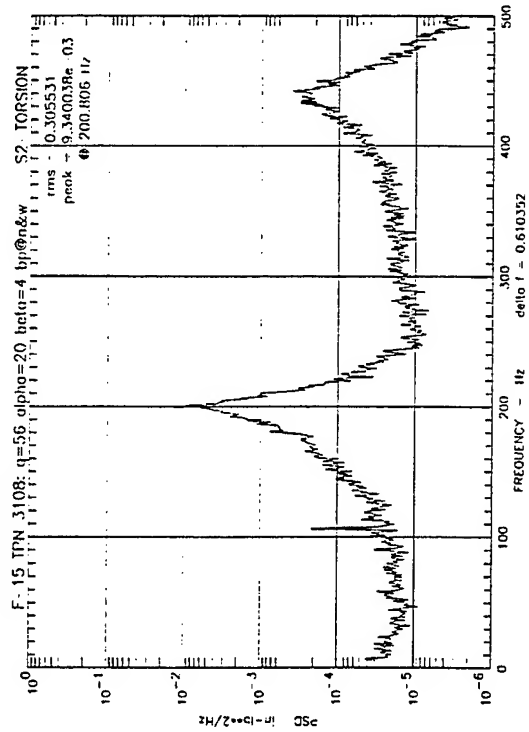


F-15 Tail Buffet Test

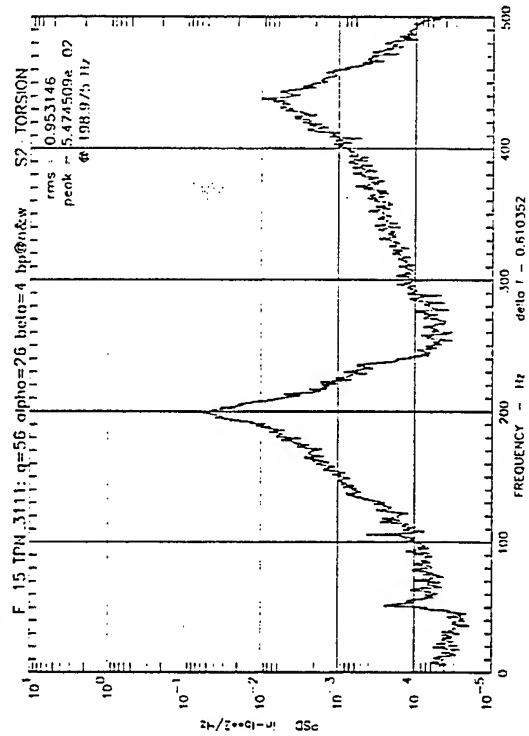




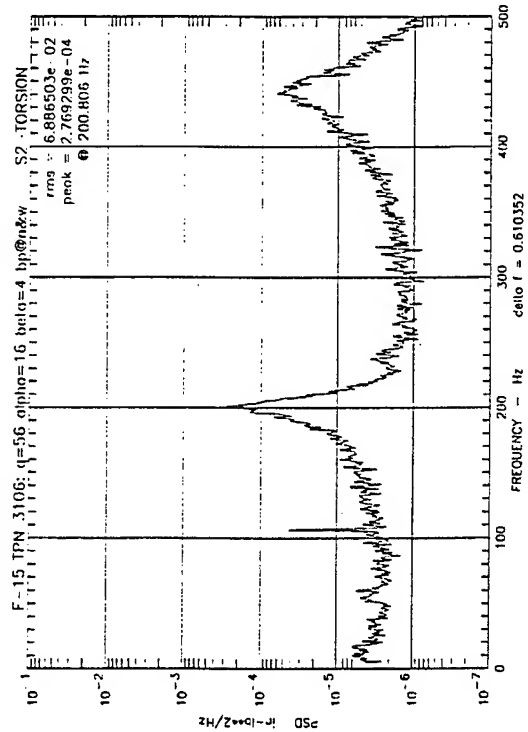
F-15 Tail Buffet Test



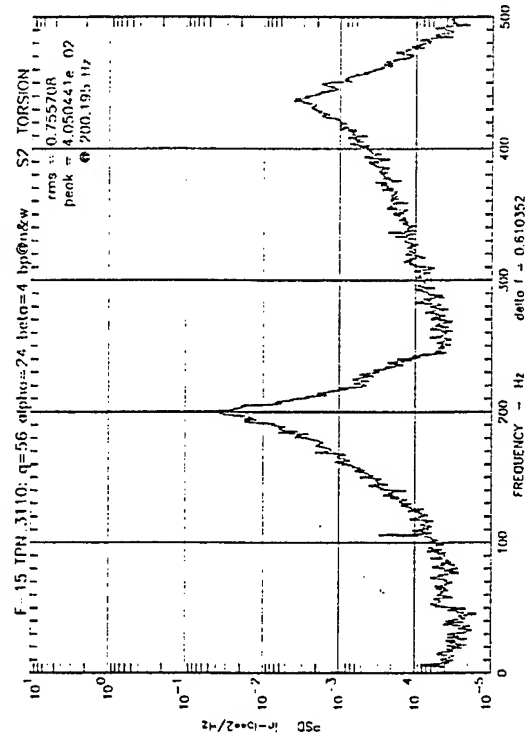
F-15 Tail Buffet Test



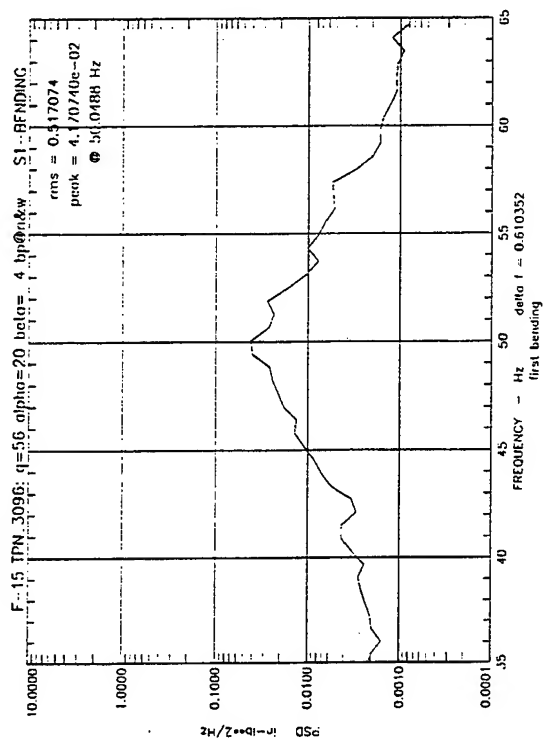
F-15 Tail Buffet Test



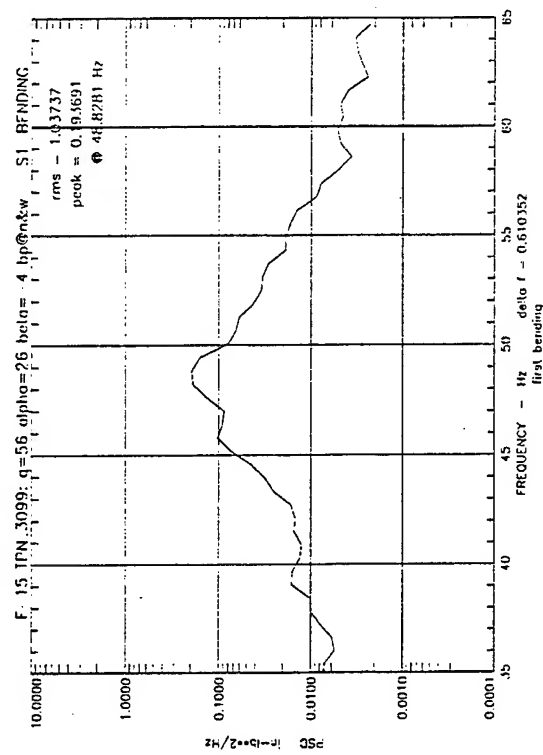
F-15 Tail Buffet Test



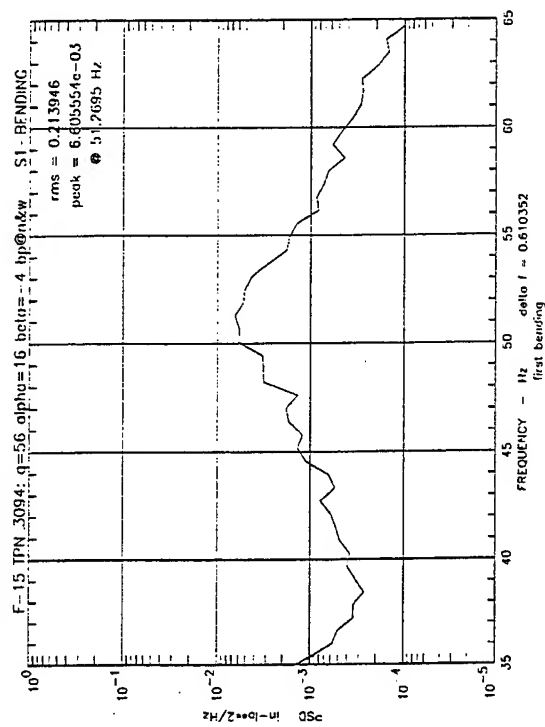
F-15 Tail Buffet Test



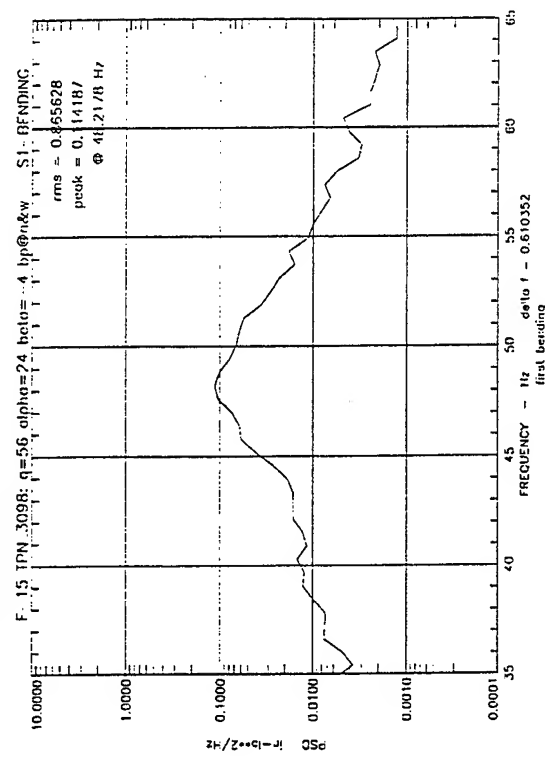
F-15 Tail Buffet Test



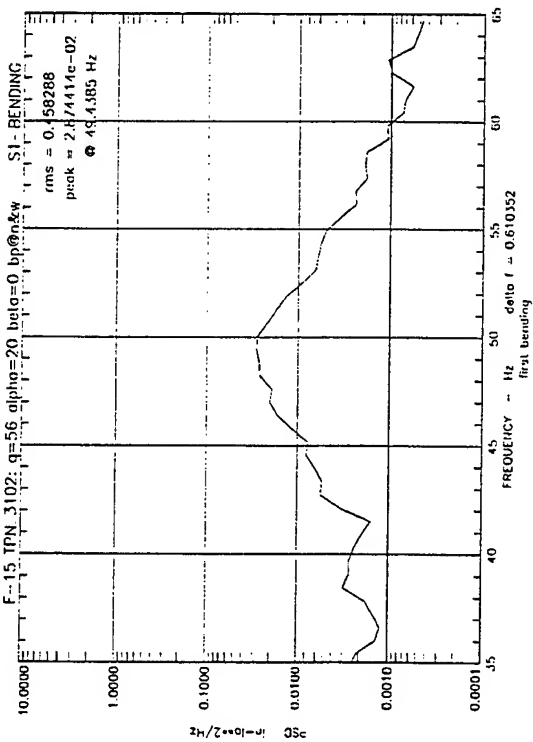
F-15 Tail Buffet Test



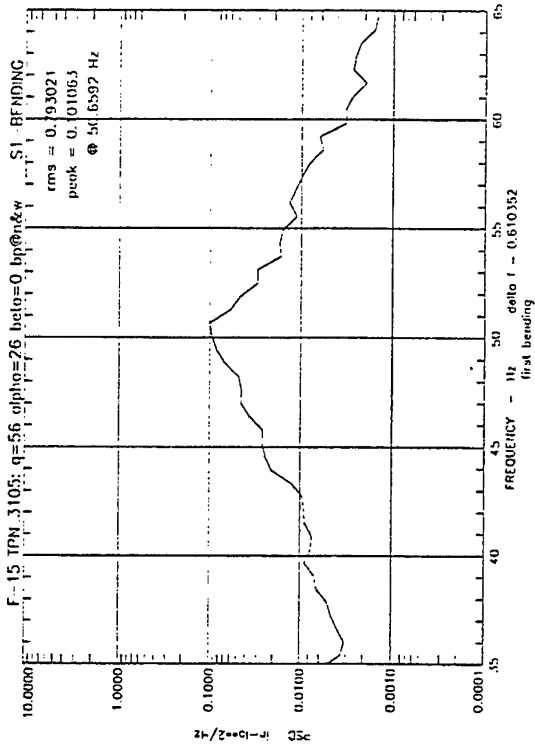
F-15 Tail Buffet Test



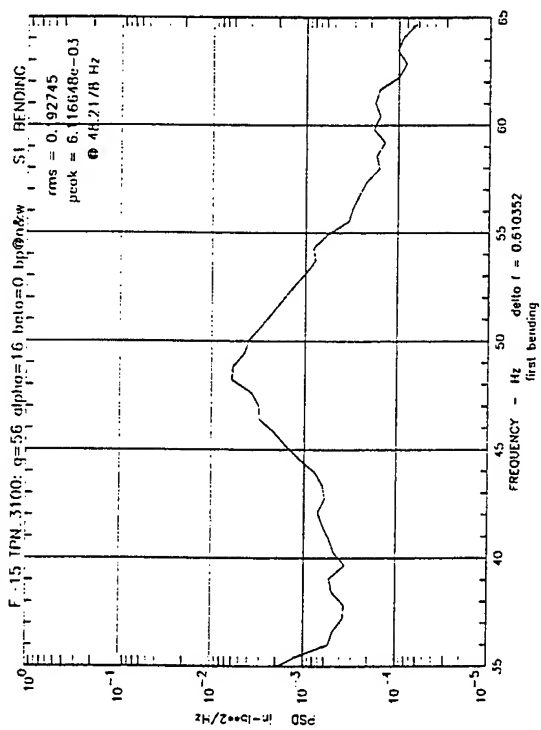
F-15 Tail Buffet Test



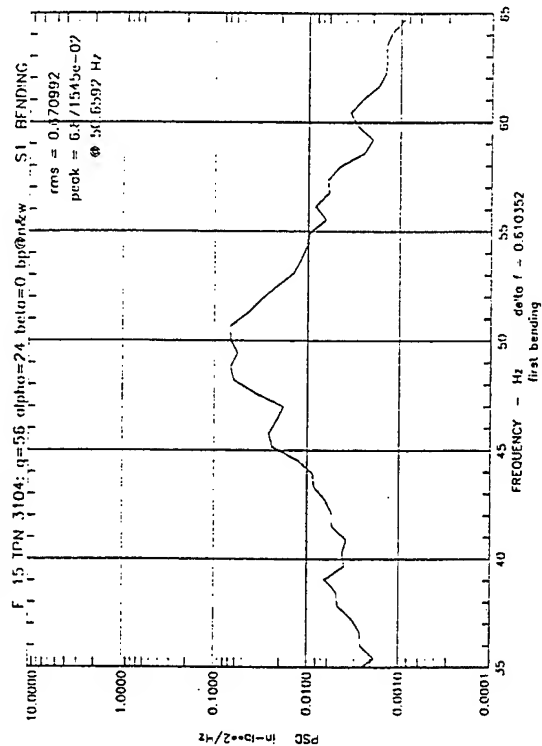
F-15 Tail Buffet Test



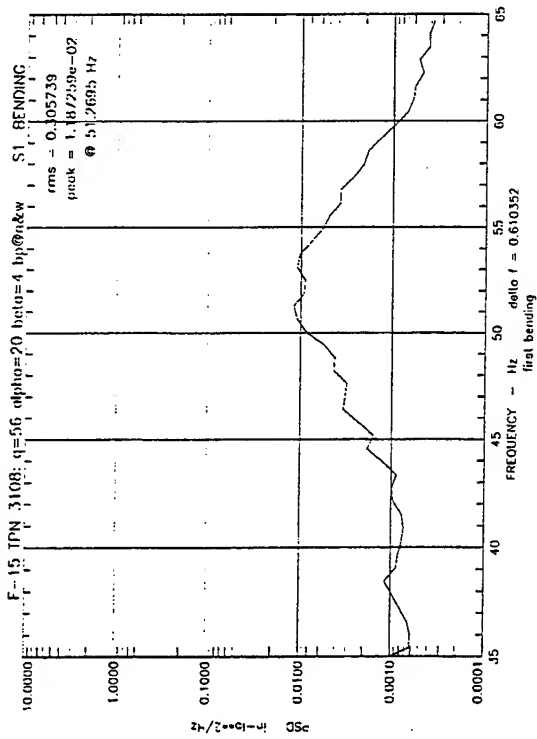
F-15 Tail Buffet Test



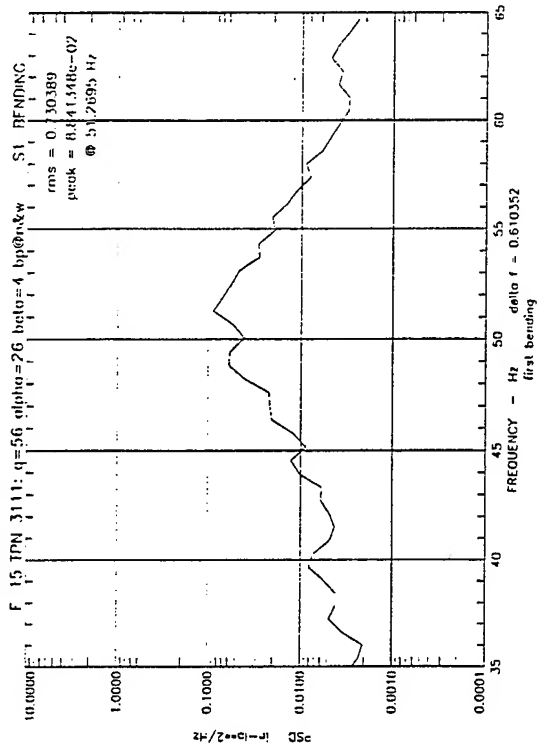
F-15 Tail Buffet Test



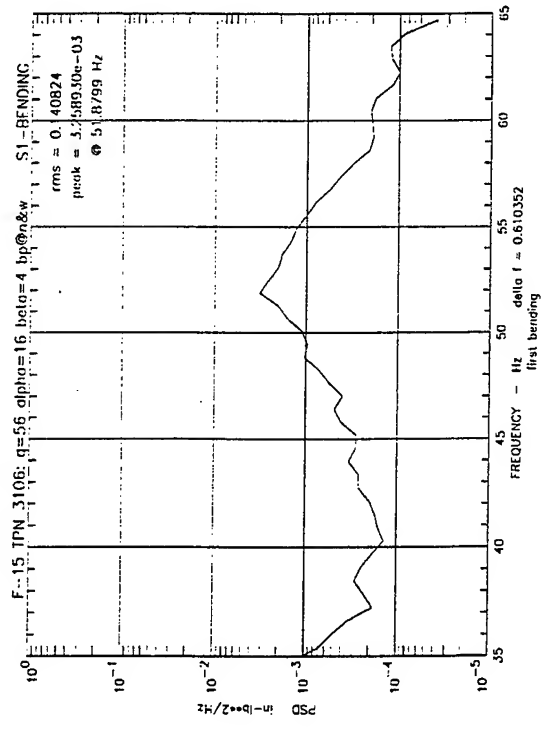
F-15 Tail Buffet Test



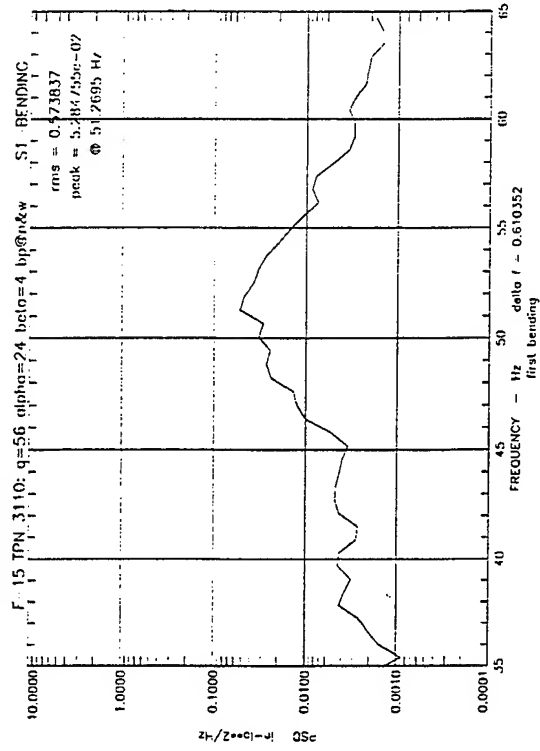
F-15 Tail Buffet Test



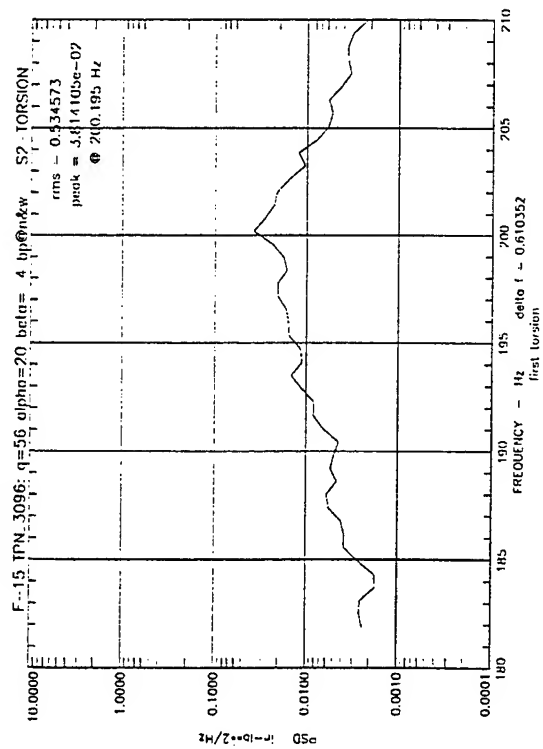
F-15 Tail Buffet Test



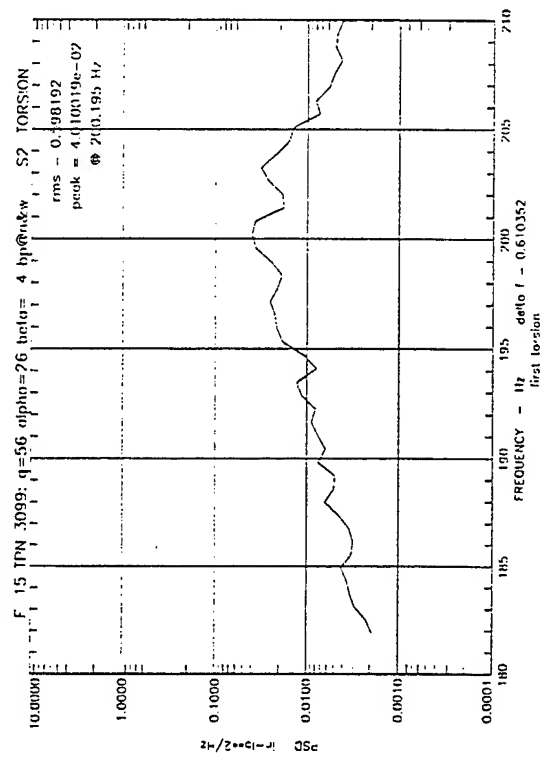
F-15 Tail Buffet Test



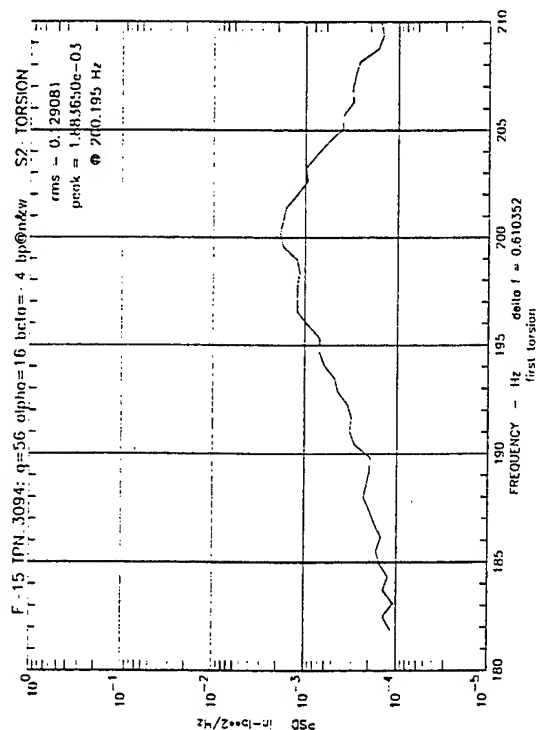
F-15 Tail Buffet Test



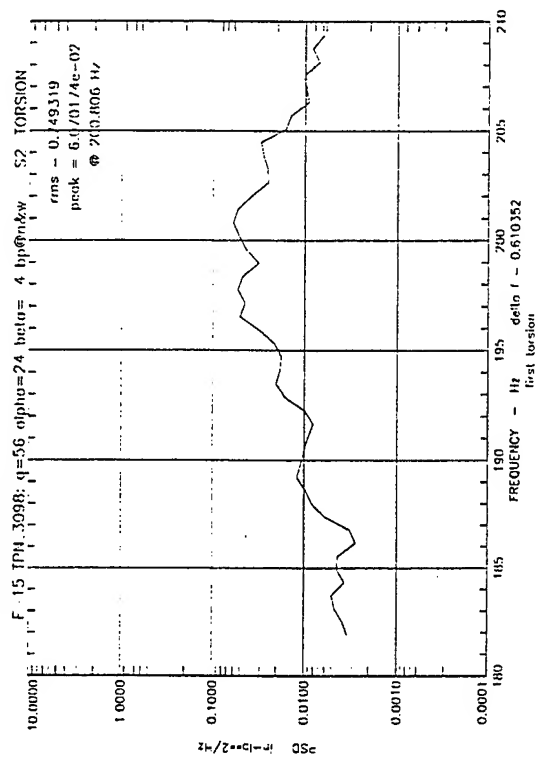
F-15 Tail Buffet Test



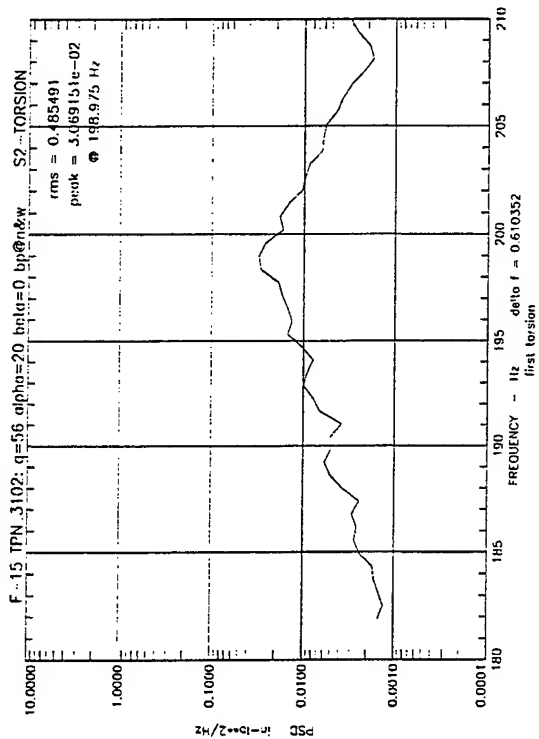
F-15 Tail Buffet Test



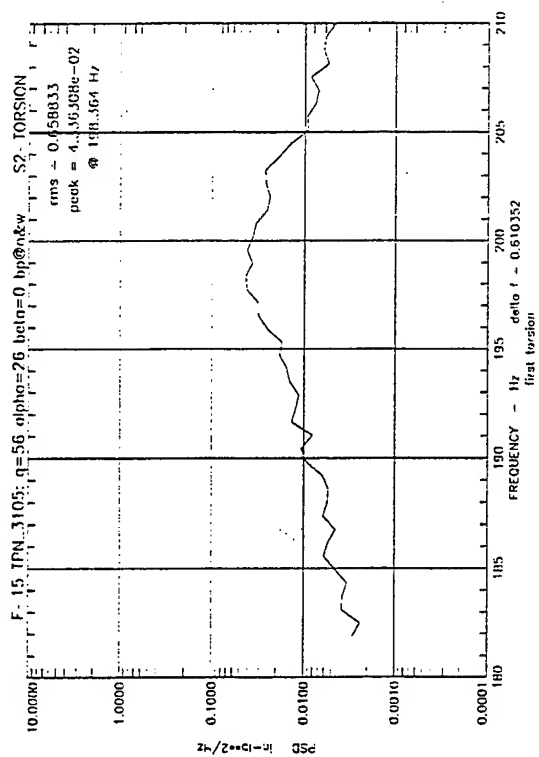
F-15 Tail Buffet Test



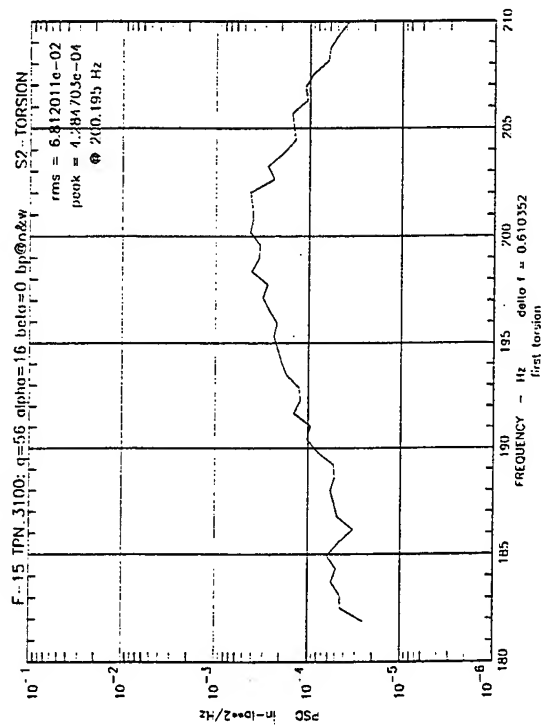
F-15 Tail Buffet Test



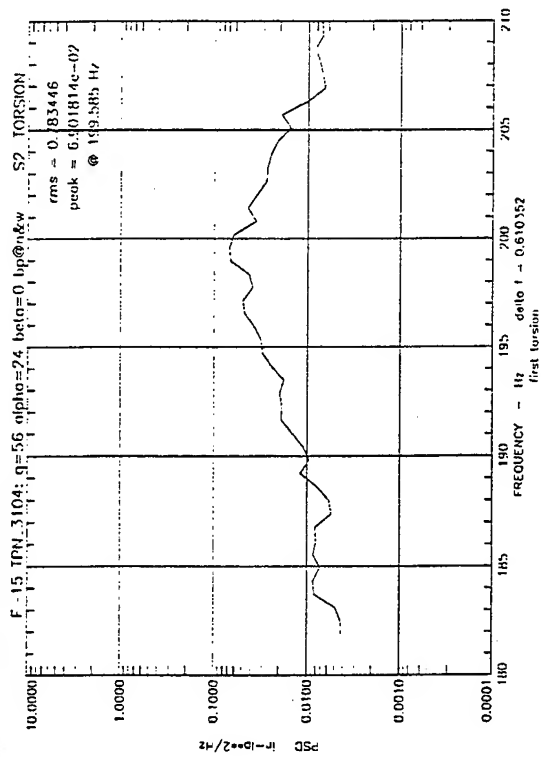
F-15 Tail Buffet Test



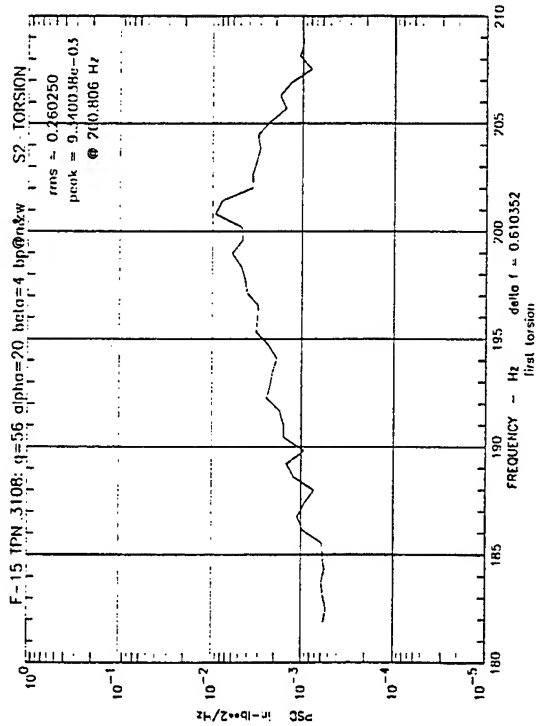
F-15 Tail Buffet Test



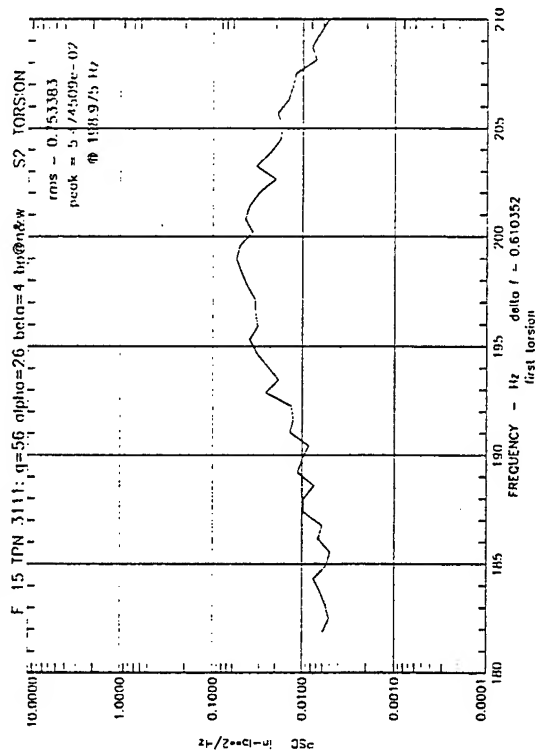
F-15 Tail Buffet Test



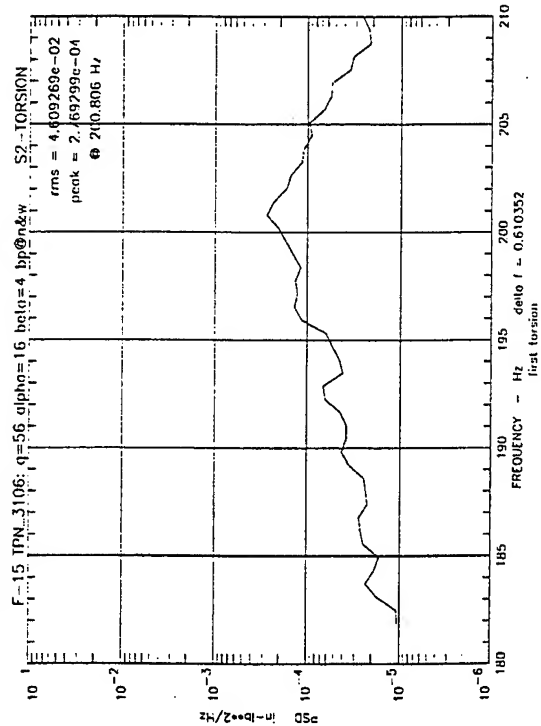
F-15 Tail Buffet Test



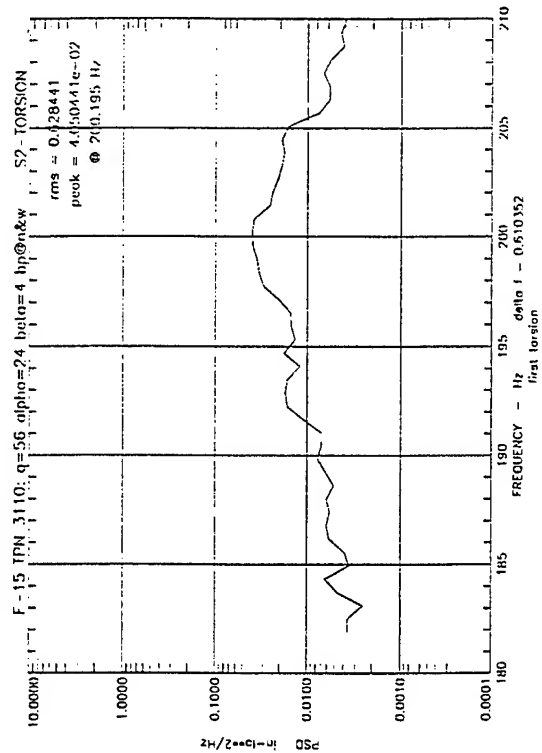
F-15 Tail Buffet Test



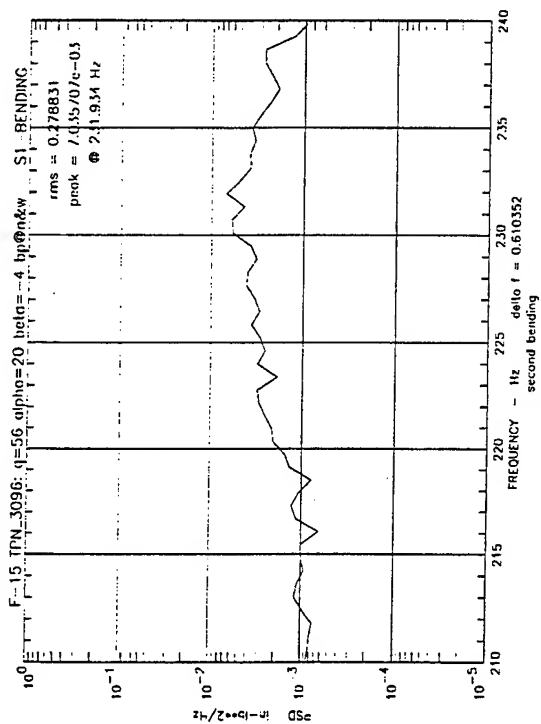
F-15 Tail Buffet Test



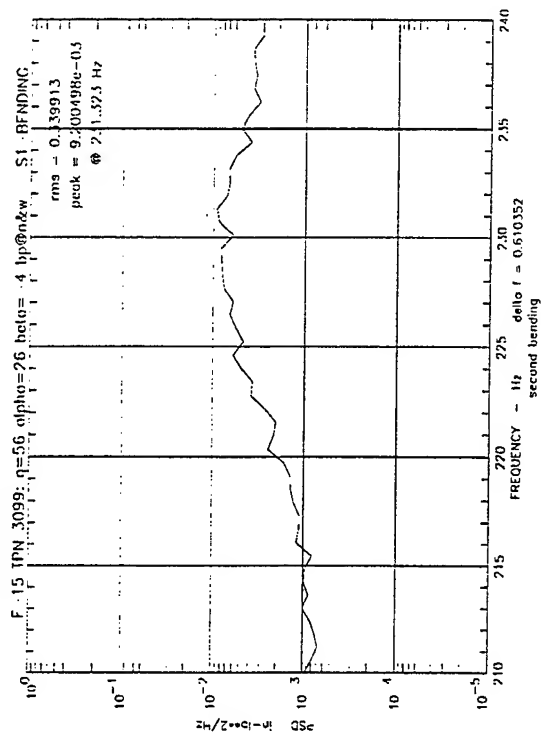
F-15 Tail Buffet Test



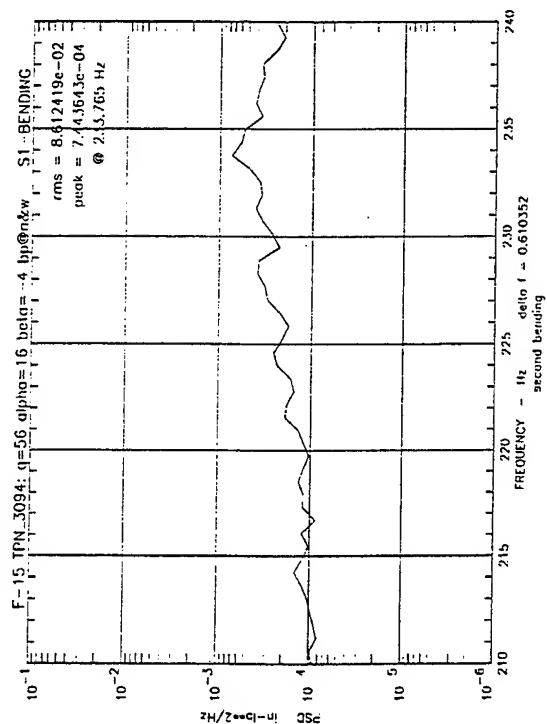
F-15 Tail Buffet Test



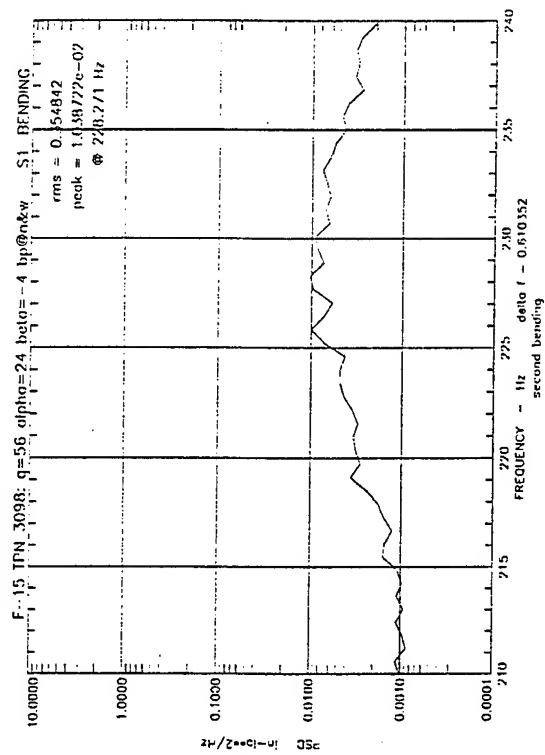
F-15 Tail Buffet Test



F-15 Tail Buffet Test

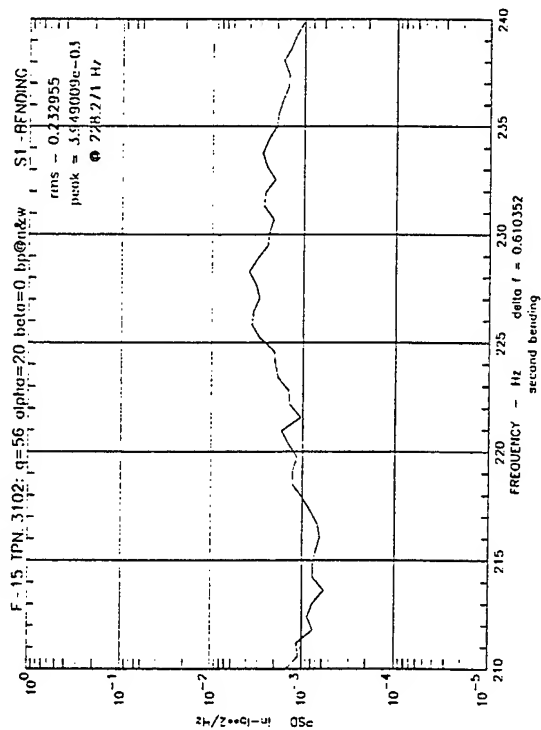


F-15 Tail Buffet Test

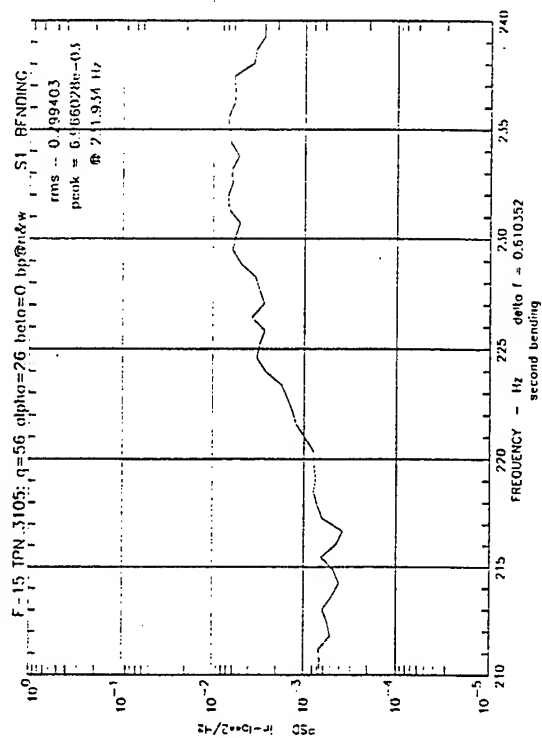




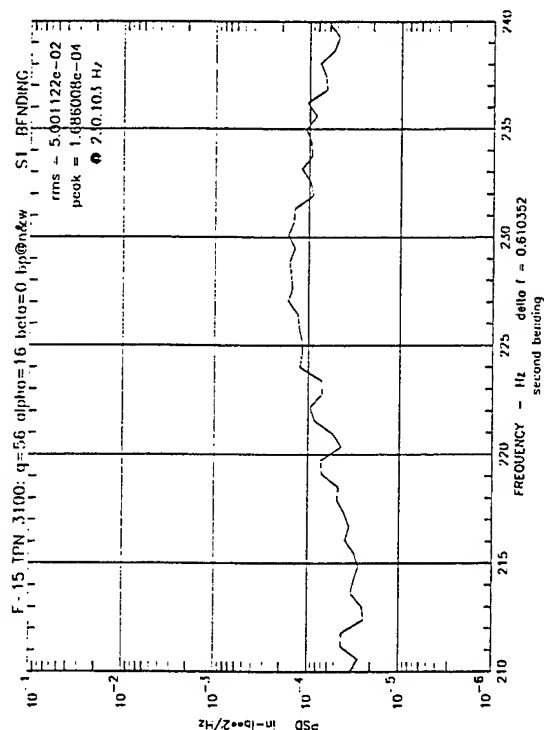
# F-15 Tail Buffet Test



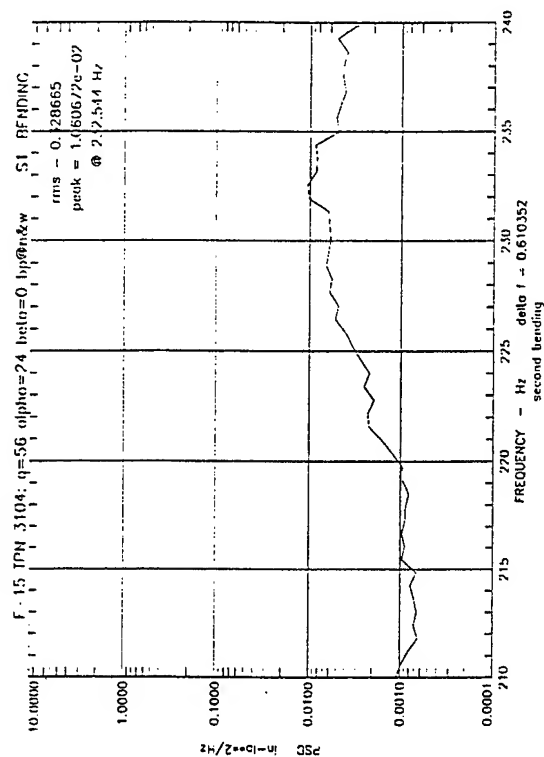
# F-15 Tail Buffet Test



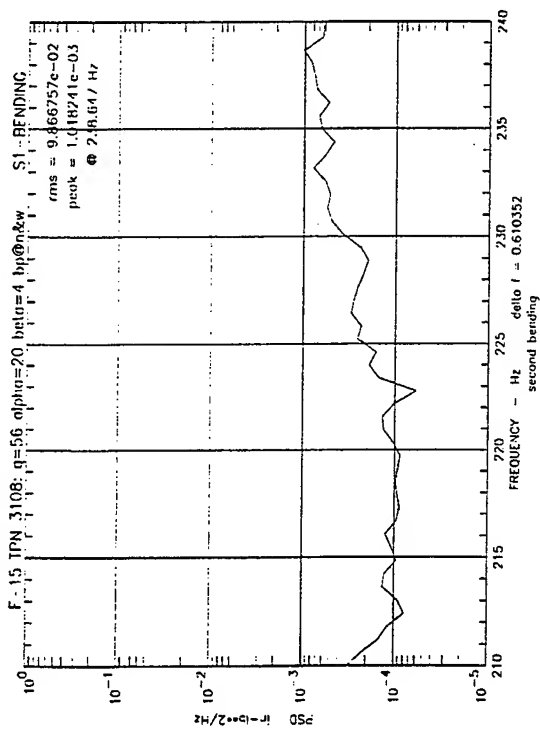
# F-15 Tail Buffet Test



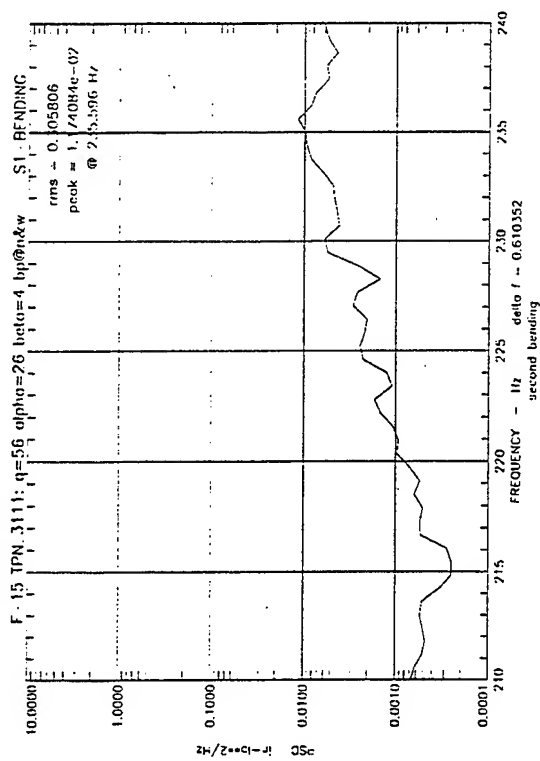
# F-15 Tail Buffet Test



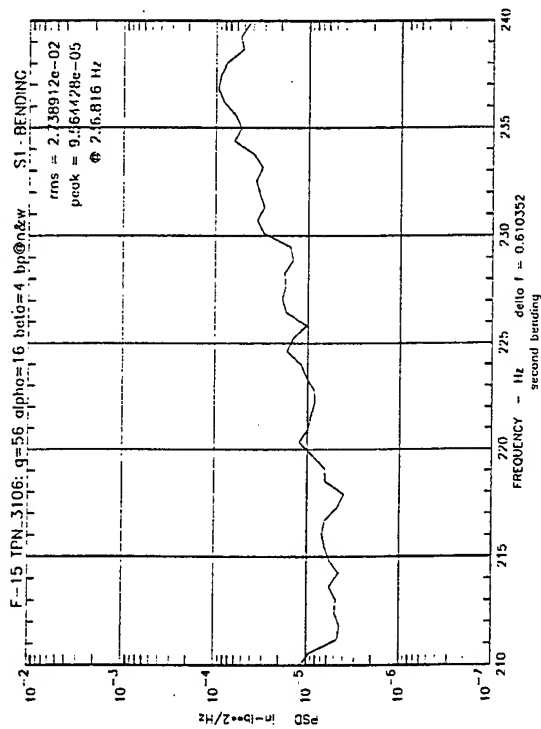
F-15 Tail Buffet Test



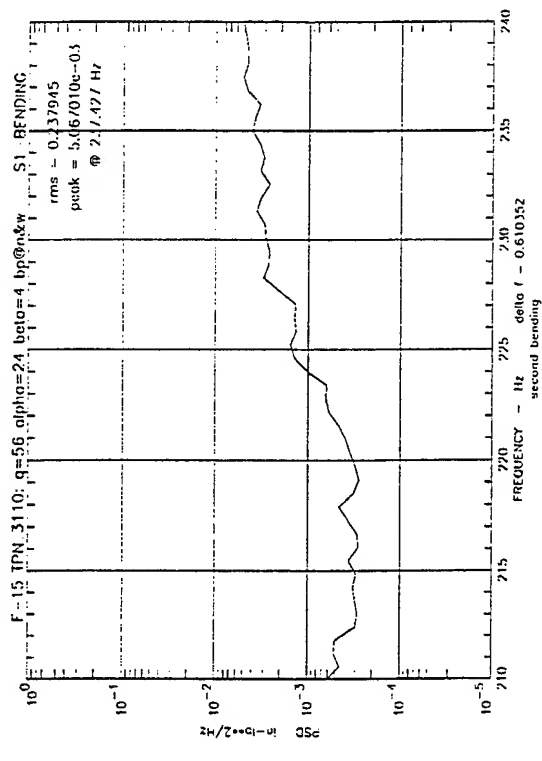
F-15 Tail Buffet Test



F-15 Tail Buffet Test



F-15 Tail Buffet Test



**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION**

**Q= 56 PSF**

**2.1.2 RMS SUMMARY TABS**

$Q = 56 \text{ PSI}$   
NO BLOWING

F-15 Vertical Tail Buffet Test: Overall RMS Strain values

Bending: beta=0

<u>alpha</u>	<u>rms</u>
0	0.0604
2	0.0607
4	0.0600
6	0.0632
8	0.0609
10	0.0559
12	0.0616
14	0.1025
16	0.1845
18	0.3603
20	0.5754
22	0.7378
24	0.8630
28	1.2401
32	1.7935

beta=-4

<u>alpha</u>	<u>rms</u>
0	0.0442
2	0.0546
4	0.0504
6	0.0520
8	0.0537
10	0.0535
12	0.0730
14	0.1207
16	0.2240
18	0.4646
20	0.7119
22	0.8953
24	1.0324
28	1.3223
32	1.7070

alpha=22

<u>beta</u>	<u>rms</u>
-4	0.8953
-2	0.7946
0	0.7378
2	0.6679
4	0.5477

alpha=32

<u>beta</u>	<u>rms</u>
-4	1.7070
-2	1.7478
0	1.7935
2	1.6527
4	1.6212

Torsion: beta=0

<u>alpha</u>	<u>rms</u>
0	0.0171
2	0.0194
4	0.0215
6	0.0230
8	0.0207
10	0.0205
12	0.0269
14	0.0392
16	0.0751
18	0.2369
20	0.4775
22	0.7250
24	0.9184
28	0.5979
32	0.3787

beta=-4

<u>alpha</u>	<u>rms</u>
0	0.0215
2	0.0253
4	0.0193
6	0.0194
8	0.0201
10	0.0229
12	0.0429
14	0.0499
16	0.1195
18	0.3416
20	0.7053
22	0.8538
24	0.7718
28	0.3560
32	0.3144

alpha=22

<u>beta</u>	<u>rms</u>
-4	0.8538
-2	0.8241
0	0.7250
2	0.6159
4	0.4690

alpha=32

<u>beta</u>	<u>rms</u>
-4	0.3143
-2	0.3324
0	0.3787
2	0.4998
4	0.5631

0-1000 Hz data

1ST Data PKg

# F-15 Vertical Tail Buffet Test: Overall RMS & Peak Strain values (in-lbs)

## 1st Bending: 35-65 Hz

### S1-BENDING:

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	20	.4719	3.268E-02	49.4
-4	22	.6473	4.857E-02	50.0
-4	24	.8462	1.104E-01	48.2
-4	28	1.1270	2.024E-01	48.2
-4	32	1.5490	3.856E-01	48.8
0	20	.4131	2.155E-02	50.0
0	22	.5085	3.832E-02	50.0
0	24	.6262	4.925E-02	48.8
0	28	1.0190	1.584E-01	48.2
0	32	1.6110	5.005E-01	47.6
4	20	.2885	8.435E-03	50.7
4	22	.4207	2.526E-02	50.7
4	24	.6123	6.338E-02	50.7
4	28	.9290	1.363E-01	50.0
4	32	1.3960	3.659E-01	48.8

### S2-TORSION:

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	20	.0380	9.866E-05	51.3
-4	22	.0420	8.967E-05	50.0
-4	24	.0404	8.481E-05	50.7
-4	28	.0449	1.069E-04	47.6
-4	32	.0535	1.980E-04	48.8
0	20	.0327	5.622E-05	50.7
0	22	.0386	8.764E-05	50.7
0	24	.0404	9.997E-05	51.9
0	28	.0462	1.130E-04	49.4
0	32	.0608	2.242E-04	50.7
4	20	.0233	2.000E-05	50.7
4	22	.0295	4.364E-05	51.9
4	24	.0361	8.377E-05	51.3
4	28	.0477	1.203E-04	50.0
4	32	.0715	3.489E-04	49.4

## 1st Torsion: 180-210 Hz

### S1-BENDING:

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	20	.3252	8.078E-03	192.3
-4	22	.3477	1.006E-02	191.0
-4	24	.2642	5.653E-03	191.0
-4	28	.2000	2.500E-03	195.3
-4	32	.2036	2.551E-03	193.5
0	20	.2273	5.093E-03	190.4
0	22	.3139	9.370E-03	189.8
0	24	.3607	1.314E-02	191.0
0	28	.2121	2.764E-03	191.0
0	32	.2400	3.000E-03	193.5
4	20	.1215	1.235E-03	192.3
4	22	.2093	3.989E-03	191.6
4	24	.3067	8.946E-03	193.5
4	28	.3060	7.667E-03	193.5
4	32	.2200	2.000E-03	195.3

### S2-TORSION:

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	20	.5690	2.721E-02	190.4
-4	22	.6756	3.987E-02	191.0
-4	24	.5643	2.557E-02	191.6
-4	28	.2354	4.128E-03	194.7
-4	32	.2240	4.622E-03	193.5
0	20	.3817	1.632E-02	190.4
0	22	.5708	3.368E-02	189.8
0	24	.7279	5.535E-02	191.0
0	28	.4221	1.556E-02	191.0
0	32	.2695	5.935E-03	193.5
4	20	.2140	4.036E-03	192.3
4	22	.3882	1.423E-02	191.6
4	24	.6070	3.559E-02	193.5
4	28	.7277	4.453E-02	192.9
4	32	.3947	1.381E-02	195.3

## 2nd Bending: 210-240 Hz

### S1-BENDING:

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	20	.3241	6.926E-03	230.1
-4	22	.3698	9.630E-03	226.4
-4	24	.3158	7.514E-03	227.1
-4	28	.4941	1.790E-03	227.7
-4	32	.3532	9.624E-03	227.1
0	20	.2478	4.503E-03	228.9
0	22	.3145	6.206E-03	228.9
0	24	.3090	5.511E-03	228.9
0	28	.4908	1.687E-02	228.9
0	32	.4465	1.303E-02	231.3
4	20	.1100	8.259E-04	229.5
4	22	.1812	2.647E-03	232.5
4	24	.2640	5.177E-03	231.9
4	28	.3367	9.148E-03	233.2
4	32	.5290	1.955E-02	228.3

### S2-TORSION:

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	20			
-4	22			
-4	24			
-4	28	.0636	2.218E-04	227.7
-4	32	.0455	1.199E-04	229.5
0	20			
0	22			
0	24			
0	28			
0	32			
4	20			
4	22			
4	24			
4	28			
4	32			

**F-15 Vertical Tail Buffet Test: RMS (in-lbs) & Peak PSD (in-lbs\*\*2/Hz)****1st Bending: 35-65 Hz****S1-BENDING: No Blowing Pressure**

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	20	.4719	3.268E-02	49.4
-4	24	.8462	1.104E-01	48.2
-4	28	1.1270	2.024E-01	48.2
-4	32	1.5490	3.856E-01	48.8
0	20	.4131	2.155E-02	50.0
0	24	.6262	4.925E-02	48.8
0	28	1.0190	1.584E-01	48.2
0	32	1.6110	5.005E-01	47.6
4	20	.2885	8.435E-03	50.7
4	24	.6123	6.338E-02	50.7
4	28	.9290	1.363E-01	50.0
4	32	1.3960	3.659E-01	48.8

**Blowing pressure: 45**

<u>rms</u>	<u>peak</u>	<u>freq</u>
.4986	4.054E-02	50.0
.9510	1.452E-01	48.2
1.4290	4.141E-01	48.8
1.5620	4.819E-01	51.3
.4412	2.900E-02	49.4
.6672	6.118E-02	51.3
.9331	1.411E-01	50.7
1.5640	4.996E-01	51.3
.2737	1.073E-02	52.5
.5828	5.478E-02	52.5
1.0090	1.738E-01	50.0
1.5400	3.871E-01	50.0

**Blowing pressure: 65**

<u>rms</u>	<u>peak</u>	<u>freq</u>
.5398	3.973E-02	51.3
.8456	1.098E-01	48.8
1.1660	2.355E-01	46.4
.4624	2.974E-02	50.7
.6778	5.635E-02	50.0
.9817	1.540E-01	47.6
.3216	1.506E-02	51.9
.5852	5.325E-02	51.9
.8727	1.061E-01	47.6

**1st Torsion: 180-210 Hz****S2-TORSION: No Blowing Pressure**

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	20	.5690	2.721E-02	190.4
-4	24	.5643	2.557E-02	191.6
-4	28	.2354	4.128E-03	194.7
-4	32	.2240	4.622E-03	193.5
0	20	.3817	1.632E-02	190.4
0	24	.7279	5.535E-02	191.0
0	28	.4221	1.556E-02	191.0
0	32	.2695	5.935E-03	193.5
4	20	.2140	4.036E-03	192.3
4	24	.6070	3.559E-02	193.5
4	28	.7277	4.453E-02	192.9
4	32	.3947	1.381E-02	195.3

**Blowing pressure: 45**

<u>rms</u>	<u>peak</u>	<u>freq</u>
.4731	2.536E-02	202.0
.6783	5.404E-02	202.6
.3523	1.416E-02	204.5
.2372	5.284E-03	204.5
.3662	1.566E-02	203.2
.6712	5.378E-02	201.4
.5519	3.562E-02	203.9
.3151	1.124E-02	205.7
.1989	4.321E-03	203.9
.4963	2.989E-02	203.2
.8196	8.183E-02	203.2
.4154	2.289E-02	204.5

**Blowing pressure: 65**

<u>rms</u>	<u>peak</u>	<u>freq</u>
.5591	2.847E-02	200.2
.6991	4.891E-02	200.2
.3057	7.418E-03	189.8
.4658	2.160E-02	200.2
.8163	7.479E-02	199.0
.4414	1.860E-02	189.8
.2567	6.459E-03	198.4
.5939	3.316E-02	199.6
.7103	4.342E-02	190.4

**2nd Bending: 210-240 Hz****S1-BENDING: No Blowing Pressure**

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	20	.3241	6.926E-03	230.1
-4	24	.3158	7.514E-03	227.1
-4	28	.4941	1.790E-03	227.7
-4	32	.3532	9.624E-03	227.1
0	20	.2478	4.503E-03	228.9
0	24	.3090	5.511E-03	228.9
0	28	.4908	1.687E-02	228.9
0	32	.4465	1.303E-02	231.3
4	20	.1100	8.259E-04	229.5
4	24	.2640	5.177E-03	231.9
4	28	.3367	9.148E-03	233.2
4	32	.5290	1.955E-02	228.3

**Blowing pressure: 45**

<u>rms</u>	<u>peak</u>	<u>freq</u>
.2588	5.591E-03	233.2
.3568	1.062E-02	233.8
.4970	2.152E-02	235.6
.3313	1.299E-02	237.4
.1813	2.526E-03	231.9
.3143	8.208E-03	232.5
.4239	1.939E-02	235.6
.3797	1.529E-02	239.3
no peak in range		
no peak in range		
.3236	1.183E-02	236.2
.4909	2.343E-02	236.8

**Blowing pressure: 65**

<u>rms</u>	<u>peak</u>	<u>freq</u>
.2924	5.703E-03	233.8
.3576	1.117E-02	228.3
.4578	1.407E-02	222.8
.2218	3.397E-03	230.7
.3331	9.752E-03	232.5
.4347	1.179E-02	219.7
.0875	8.117E-04	238.6
.2121	4.425E-03	236.8
.3222	7.300E-03	220.3

# F-15 Vertical Tail Buffet Test: RMS (in-lbs) & Peak PSD (in-lbs\*\*2/Hz)

## 1st Bending: 35-65 Hz

### S1-BENDING: No Blowing Pressure

Beta	Alpha	rms	peak	freq
-4	20	.4719	3.268E-02	49.4
-4	22	.6473	4.857E-02	50.0
-4	24	.8462	1.104E-01	48.2
-4	28	1.1270	2.024E-01	48.2
-4	32	1.5490	3.856E-01	48.8
0	20	.4131	2.155E-02	50.0
0	22	.5085	3.832E-02	50.0
0	24	.6262	4.925E-02	48.8
0	28	1.0190	1.584E-01	48.2
0	32	1.6110	5.005E-01	47.6
4	20	.2885	8.435E-03	50.7
4	22	.4207	2.526E-02	50.7
4	24	.6123	6.338E-02	50.7
4	28	.9290	1.363E-01	50.0
4	32	1.3960	3.659E-01	48.8

### Wing Blowing Pressure

B.P.	Beta	Alpha	rms	peak	freq
45	-4	32	1.5620	4.819E-01	51.3
45	0	24	.6672	6.118E-02	51.3
65	0	24	.6224	4.609E-02	47.0
45	0	32	1.5644	4.996E-01	51.3
45	4	32	1.5402	3.871E-01	50.0

## 1st Torsion: 180-210 Hz

### S2-TORSION: No Blowing Pressure

Beta	Alpha	rms	peak	freq
-4	20	.5690	2.721E-02	190.4
-4	22	.6756	3.987E-02	191.0
-4	24	.5643	2.557E-02	191.6
-4	28	.2354	4.128E-03	194.7
-4	32	.2240	4.622E-03	193.5
0	20	.3817	1.632E-02	190.4
0	22	.5708	3.368E-02	189.8
0	24	.7279	5.535E-02	191.0
0	28	.4221	1.556E-02	191.0
0	32	.2695	5.935E-03	193.5
4	20	.2140	4.036E-03	192.3
4	22	.3882	1.423E-02	191.6
4	24	.6070	3.559E-02	193.5
4	28	.7277	4.453E-02	192.9
4	32	.3947	1.381E-02	195.3

### Wing Blowing Pressure

B.P.	Beta	Alpha	rms	peak	freq
45	-4	32	.2372	5.284E-03	204.5
45	0	24	.6712	5.378E-02	201.4
65	0	24	.6099	3.122E-02	187.4
45	0	32	.3151	1.124E-02	205.7
45	4	32	.4154	2.289E-02	204.5

this changes  $\alpha_{in}$  to .8163 next set of data

## 2nd Bending: 210-240 Hz

### S1-BENDING: No Blowing Pressure

Beta	Alpha	rms	peak	freq
-4	20	.3241	6.926E-03	230.1
-4	22	.3698	9.630E-03	226.4
-4	24	.3158	7.514E-03	227.1
-4	28	.4941	1.790E-03	227.7
-4	32	.3532	9.624E-03	227.1
0	20	.2478	4.503E-03	228.9
0	22	.3145	6.206E-03	228.9
0	24	.3090	5.511E-03	228.9
0	28	.4908	1.687E-02	228.9
0	32	.4465	1.303E-02	231.3
4	20	.1100	8.259E-04	229.5
4	22	.1812	2.647E-03	232.5
4	24	.2640	5.177E-03	231.9
4	28	.3367	9.148E-03	233.2
4	32	.5290	1.955E-02	228.3

### Wing Blowing Pressure

B.P.	Beta	Alpha	rms	peak	freq
45	-4	32	.3313	1.299E-02	237.4
45	0	24	.3143	8.208E-03	232.5
65	0	24	.3136	7.744E-03	216.7
45	0	32	.3797	1.529E-02	239.3
45	4	32	.4909	2.343E-02	236.8

this changed to .3331 in next set of data

## F-15 Vertical Tail Buffet Test: RMS (in-lbs) &amp; Peak PSD (in-lbs\*\*2/Hz)

## 1st Bending: 35-65 Hz

## S1-BENDING: No Blowing Pressure

Beta	Alpha	rms	peak	freq
-4	20	.4719	3.268E-02	49.4
-4	24	.8462	1.104E-01	48.2
-4	28	1.1270	2.024E-01	48.2
-4	32	1.5490	3.856E-01	48.8
0	20	.4131	2.155E-02	50.0
0	24	.6262	4.925E-02	48.8
0	28	<u>1.0180</u>	1.584E-01	48.2
0	32	<u>1.6110</u>	5.005E-01	47.6
4	20	.2885	8.435E-03	50.7
4	24	.6123	6.338E-02	50.7
4	28	.9290	1.363E-01	50.0
4	32	1.3960	3.659E-01	48.8

## Blowing pressure: 45

rms	peak	freq
.4986	4.054E-02	50.0
.9510	1.452E-01	48.2
1.4290	4.141E-01	48.8
1.5620	4.819E-01	51.3
.4412	2.900E-02	49.4
.6672	6.118E-02	51.3
.9331	1.411E-01	50.7
<u>1.5640</u>	4.996E-01	51.3
.2737	1.073E-02	52.5
.5828	5.478E-02	52.5
1.0090	1.738E-01	50.0
1.5400	3.871E-01	50.0

## Blowing pressure: 65

rms	peak	freq
.5398	3.973E-02	51.3
.8456	1.098E-01	48.8
<u>1.1660</u>	2.355E-01	46.4
.4624	2.974E-02	50.7
.6778	5.635E-02	50.0
.9817	1.540E-01	47.6
.3216	1.506E-02	51.9
.5852	5.325E-02	51.9
.8727	1.061E-01	47.6

## 1st Torsion: 180-210 Hz

## S2-TORSION: No Blowing Pressure

Beta	Alpha	rms	peak	freq
-4	20	.5690	2.721E-02	190.4
-4	24	.5643	2.557E-02	191.6
-4	28	.2354	4.128E-03	194.7
-4	32	.2240	4.622E-03	193.5
0	20	.3817	1.632E-02	190.4
0	24	<u>.7279</u>	5.535E-02	191.0
0	28	.4221	1.556E-02	191.0
0	32	.2695	5.935E-03	193.5
4	20	.2140	4.036E-03	192.3
4	24	.6070	3.559E-02	193.5
4	28	.7277	4.453E-02	192.9
4	32	.3947	1.381E-02	195.3

## Blowing pressure: 45

rms	peak	freq
.4731	2.536E-02	202.0
.6783	5.404E-02	202.6
.3523	1.416E-02	204.5
.2372	5.284E-03	204.5
.3662	1.566E-02	203.2
.6712	5.378E-02	201.4
.5519	3.562E-02	203.9
.3151	1.124E-02	205.7
.1989	4.321E-03	203.9
<del>.4983</del>	2.989E-02	203.2
<u>.8196</u>	<u>8.183E-02</u>	203.2
.4154	2.289E-02	204.5

## Blowing pressure: 65

rms	peak	freq
.5591	2.847E-02	200.2
.6991	4.891E-02	200.2
.3057	7.418E-03	189.8
.4658	2.160E-02	200.2
<u>.8163</u>	7.479E-02	199.0
.4414	1.860E-02	189.8
.2567	6.459E-03	198.4
.5939	3.316E-02	199.6
.7103	4.342E-02	190.4

## 2nd Bending: 210-240 Hz

## S1-BENDING: No Blowing Pressure

Beta	Alpha	rms	peak	freq
-4	20	.3241	6.926E-03	230.1
-4	24	.3158	7.514E-03	227.1
-4	28	.4941	1.790E-03	227.7
-4	32	.3532	9.624E-03	227.1
0	20	.2478	4.503E-03	228.9
0	24	.3090	5.511E-03	228.9
0	28	.4908	1.687E-02	228.9
0	32	.4465	1.303E-02	231.3
4	20	.1100	8.259E-04	229.5
4	24	.2640	5.177E-03	231.9
4	28	<u>.3367</u>	9.148E-03	233.2
4	32	<u>.5290</u>	1.955E-02	228.3

## Blowing pressure: 45

rms	peak	freq
.2588	5.591E-03	233.2
.3568	1.062E-02	233.8
<u>.4970</u>	2.152E-02	235.6
.3313	1.299E-02	237.4
.1813	2.526E-03	231.9
.3143	8.208E-03	232.5
.4239	1.939E-02	235.6
.3797	1.529E-02	239.3
no peak in range		
no peak in range		
.3236	1.183E-02	236.2
.4909	2.343E-02	236.8

## Blowing pressure: 65

rms	peak	freq
.2924	5.703E-03	233.8
.3576	1.117E-02	228.3
<u>.4578</u>	1.407E-02	222.8
.2218	3.397E-03	230.7
.3331	9.752E-03	232.5
.4347	1.179E-02	219.7
.0875	8.117E-04	238.6
.2121	4.425E-03	236.8
.3222	7.300E-03	220.3



F-15 Vertical Tail Buffet Test: Overall RMS (in-lbs) & Peak of PSD (in-lbs\*\*2/Hz), Q=56 psi

2nd Bending: 210-240 Hz

S1-BENDING: No Blowing Pressure

Blowing pressure: 45

Blowing pressure: 65

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	8	.0175	2.024E-05	232.5	no peak in range			no data		
-4	12	.0236	4.368E-05	231.9	no peak in range			no data		
-4	16	.0800	3.758E-04	228.3	no peak in range			.0894	6.685E-04	234.4
-4	20	.3241	6.926E-03	230.1	.2588	5.591E-03	233.2	.2924	5.703E-03	233.8
-4	24	.3158	7.514E-03	227.1	.3568	1.062E-02	233.8	.3576	1.117E-02	228.3
-4	28	.4941	1.790E-03	227.7	.4970	2.152E-02	235.6	.4578	1.407E-02	222.8
-4	32	.3532	9.624E-03	227.1	.3313	1.299E-02	237.4	no data		
0	8	.0145	1.373E-05	230.1	.0128	1.635E-05	235.0	no data		
0	12	.0155	1.542E-05	235.6	.0165	2.454E-05	233.8	no data		
0	16	.0407	1.148E-04	233.2	.0366	1.040E-04	233.2	.0504	1.850E-04	230.7
0	20	.2478	4.503E-03	228.9	.1813	2.526E-03	231.9	.2218	3.397E-03	230.7
0	24	.3090	5.511E-03	228.9	.3143	8.208E-03	232.5	.3331	9.752E-03	232.5
0	28	.4908	1.687E-02	228.9	.4239	1.939E-02	235.6	.4347	1.179E-02	219.7
0	32	.4465	1.303E-02	231.3	.3797	1.529E-02	239.3	no data		
4	8	.0111	8.438E-06	230.7	no peak in range			no data		
4	12	.0125	9.895E-06	230.1	no peak in range			no data		
4	16	.0237	4.391E-05	232.5	no peak in range			.0244	7.850E-05	238.0
4	20	.1100	8.259E-04	229.5	no peak in range			.0875	8.117E-04	238.6
4	24	.2640	5.177E-03	231.9	no peak in range			.2121	4.425E-03	236.8
4	28	.3367	9.148E-03	233.2	.3236	1.183E-02	236.2	.3222	7.300E-03	220.3
4	32	.5290	1.955E-02	228.3	.4909	2.343E-02	236.8	no data		

F-15 Vertical Tail Buffet Test: Overall RMS (in-lbs) & Peak of PSD (in-lbs\*\*2/Hz), Q=56 psi

1st Bending: 35-65 Hz

S1-BENDING: No Blowing Pressure

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	8	.0449	3.842E-04	50.1
-4	12	.0573	4.540E-04	50.7
-4	16	.1788	4.186E-03	50.7
-4	20	.4719	3.268E-02	49.4
-4	24	.8462	1.104E-01	48.2
-4	28	1.1270	2.024E-01	48.2
-4	32	1.5490	3.856E-01	48.8
0	8	.0539	4.883E-04	52.5
0	12	.0500	2.673E-04	53.1
0	16	.1552	3.504E-03	50.7
0	20	.4131	2.155E-02	50.0
0	24	.6262	4.925E-02	48.8
0	28	1.0190	1.584E-01	48.2
0	32	1.6110	5.005E-01	47.6
4	8	.0427	2.680E-04	50.7
4	12	.0447	2.546E-04	50.7
4	16	.1152	1.762E-03	51.9
4	20	.2885	8.435E-03	50.7
4	24	.6123	6.338E-02	50.7
4	28	.9290	1.363E-01	50.0
4	32	1.3960	3.659E-01	48.8

Blowing pressure: 45

<u>rms</u>	<u>peak</u>	<u>freq</u>
.0469	3.488E-04	50.7
.0750	9.914E-04	52.5
.1973	7.406E-03	51.9
.4986	4.054E-02	50.0
.9510	1.452E-01	48.2
1.4290	4.141E-01	48.8
1.5620	4.819E-01	51.3
.0562	5.658E-04	50.7
.0689	6.579E-04	49.4
.1583	2.909E-03	48.8
.4412	2.900E-02	49.4
.6672	6.118E-02	51.3
.9331	1.411E-01	50.7
1.5640	4.996E-01	51.3
.0451	3.113E-04	53.7
.0497	2.661E-04	53.7
.1083	1.594E-03	52.5
.2737	1.073E-02	52.5
.5828	5.478E-02	52.5
1.0090	1.738E-01	50.0
1.5400	3.871E-01	50.0

Blowing pressure: 65

<u>rms</u>	<u>peak</u>	<u>freq</u>
no data		
no data		
.2212	7.472E-03	51.3
.5398	3.973E-02	51.3
.8456	1.098E-01	48.8
1.1660	2.355E-01	46.4
no data		
no data		
no data		
.1818	4.153E-03	48.2
.4624	2.974E-02	50.7
.6778	5.635E-02	50.0
.9817	1.540E-01	47.6
no data		
no data		
.1292	2.420E-03	53.1
.3216	1.506E-02	51.9
.5852	5.325E-02	51.9
.8727	1.061E-01	47.6
no data		

F-15 Vertical Tail Buffet Test: Overall RMS (in-lbs) & Peak of PSD (in-lbs\*\*2/Hz), Q=56 psi

1st Torsion: 180-210 Hz

S2-TORSION: No Blowing Pressure

Blowing pressure: 45

Blowing pressure: 65

<u>Beta</u>	<u>Alpha</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>	<u>rms</u>	<u>peak</u>	<u>freq</u>
-4	8	.0041	1.421E-06	191.7	no peak in range			no data		
-4	12	.0150	1.804E-05	191.7	.0133	1.892E-05	204.5	no data		
-4	16	.0809	5.727E-04	192.3	.1086	1.217E-03	201.4	.1296	1.438E-03	200.8
-4	20	.5690	2.721E-02	190.4	.4731	2.536E-02	202.0	.5591	2.847E-02	200.2
-4	24	.5643	2.557E-02	191.6	.6783	5.404E-02	202.6	.6991	4.891E-02	200.2
-4	28	.2354	4.128E-03	194.7	.3523	1.416E-02	204.5	.3057	7.418E-03	189.8
-4	32	.2240	4.622E-03	193.5	.2372	5.284E-03	204.5	no data		
0	8	.0038	1.177E-06	189.2	no peak in range			no data		
0	12	.0102	9.125E-06	192.9	no peak in range			no data		
0	16	.0495	2.266E-04	191.7	.0520	2.861E-04	203.9	.0688	4.102E-04	198.4
0	20	.3817	1.632E-02	190.4	.3662	1.566E-02	203.2	.4658	2.160E-02	200.2
0	24	.7279	5.535E-02	191.0	.6712	5.378E-02	201.4	.8163	7.479E-02	199.0
0	28	.4221	1.556E-02	191.0	.5519	3.562E-02	203.9	.4414	1.860E-02	189.8
0	32	.2695	5.935E-03	193.5	.3151	1.124E-02	205.7	no data		
4	8	.0038	1.422E-06	188.6	no peak in range			no data		
4	12	.0082	5.333E-06	188.0	no peak in range			no data		
4	16	.0295	7.666E-05	192.9	.0360	1.457E-04	202.0	.0418	1.915E-04	201.4
4	20	.2140	4.036E-03	192.3	.1989	4.321E-03	203.9	.2567	6.459E-03	198.4
4	24	.6070	3.559E-02	193.5	.4963	2.989E-02	203.2	.5939	3.316E-02	199.6
4	28	.7277	4.453E-02	192.9	.8196	8.183E-02	203.2	.7103	4.342E-02	190.4
4	32	.3947	1.381E-02	195.3	.4154	2.289E-02	204.5	no data		

**F-15 Vertical Tail Buffet Test: Overall RMS (in-lb), Q=56 psf**

**87 psi blowing pressure at nose only:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.1466	.0558	.1295	.0368	.0207
4	20	.4076	.2995	.3404	.2560	.1033
4	24	.8144	.7936	.6382	.6507	.2419
4	26	1.0650	1.0710	.8494	.8630	.3065
0	16	.2040	.0813	.1764	.0571	.0433
0	20	.6206	.5776	.4480	.4976	.2506
0	24	.9144	.9681	.7052	.7823	.3044
0	26	1.0520	.8705	.8746	.6498	.3245
-4	16	.2248	.1216	.1860	.0926	.0737
-4	20	.7558	.7675	.5138	.6476	.3385
-4	24	1.1180	.8304	.9437	.6325	.3381
-4	26	1.2520	.5377	1.0210	.3804	.5303

**87 psi blowing pressure at nose & 65 psi at gun:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.1620	.0660	.1421	.0435	.0261
4	20	.4129	.3640	.3240	.3144	.1103
4	24	.7452	.7557	.5635	.6248	.2352
4	26	.9608	.9438	.7612	.7647	.2857
0	16	.2238	.1058	.1899	.0818	.0564
0	20	.6484	.6360	.4630	.5545	.2530
0	24	.9388	.9867	.7112	.8103	.3281
0	26	1.0760	.9283	.8865	.7182	.3099
-4	16	.3321	.2256	.2579	.1847	.1249
-4	20	.7467	.7859	.5095	.6684	.3118
-4	24	1.2310	.8603	1.0560	.6454	.3354
-4	26	1.4380	.6622	1.2330	.4953	.5044

**87 psi blowing pressure at nose & 65 psi at wing L.E.:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.1606	.0689	.1408	.0461	.0274
4	20	.3800	.3055	.3057	.2603	.0987
4	24	.7536	.7557	.5738	.6284	.2379
4	26	.9425	.9531	.7304	.7534	.3058
0	16	.2214	.0961	.1927	.0681	.0500
0	20	.6194	.5617	.4583	.4855	.2330
0	24	.9024	.9610	.6710	.7834	.3287
0	26	.9809	.8751	.7930	.6588	.2994
-4	16	.2626	.1608	.2139	.1291	.0861
-4	20	.6976	.6335	.5171	.5346	.2788
-4	24	1.0750	.9191	.8656	.7493	.3548
-4	26	1.1970	.7505	1.0370	.5982	.3399

F-15 Vertical Tail Buffet Test: Overall RMS (in-lb), Q=56 psi

65 psi blowing pressure at gun only:

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.1578	.0626	.1380	.0405	.0284
4	20	.4142	.3540	.3287	.3061	.1104
4	24	.7573	.7145	.5837	.5812	.2483
4	26	.9501	.9039	.7509	.7335	.2908
0	16	.2186	.1004	.1844	.0782	.0571
0	20	.6347	.6112	.4499	.5289	.2543
0	24	.9342	.9938	.6928	.8224	.3356
0	26	1.1200	.9514	.9275	.7310	.3237
-4	16	.3327	.2263	.2545	.1837	.1266
-4	20	.7730	.7977	.5344	.6742	.3216
-4	24	1.2190	.8549	1.0390	.6449	.3449
-4	26	1.4190	.6446	1.2040	.4894	.5180

65 psi blowing pressure at gun & wing L.E.:

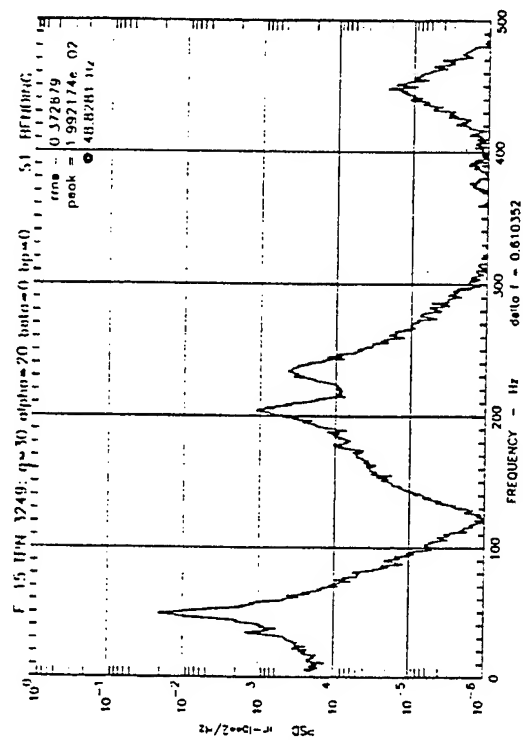
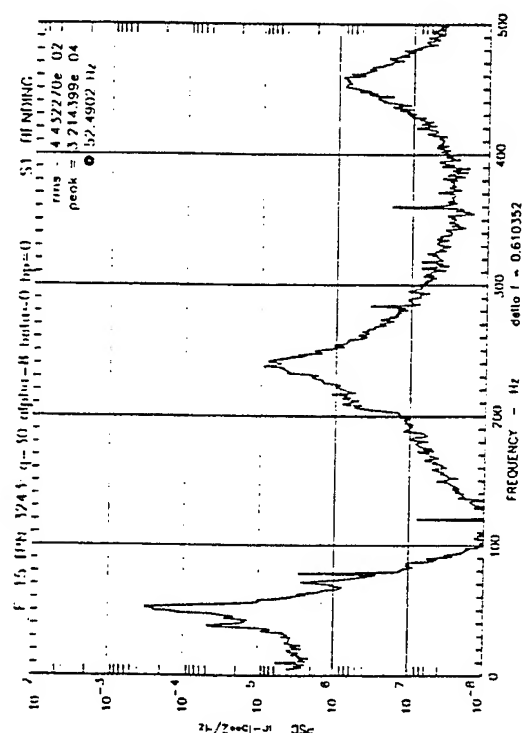
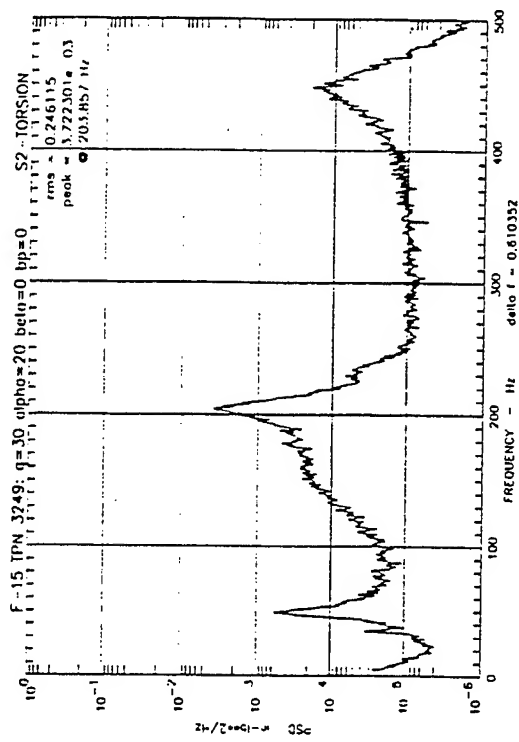
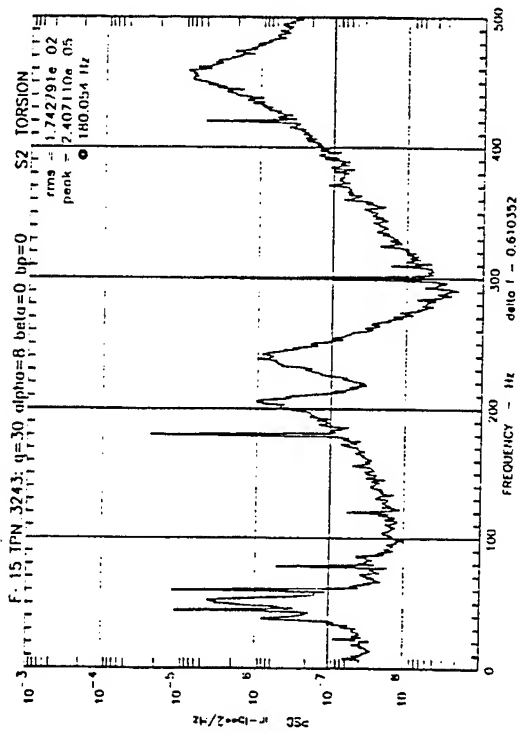
<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.1664	.0720	.1433	.0476	.0288
4	20	.4009	.3154	.3305	.2671	.0913
4	24	.7510	.6754	.5805	.5552	.2313
4	26	.9368	.8879	.7233	.7235	.3023
0	16	.2335	.1077	.1988	.0841	.0524
0	20	.6012	.5385	.4549	.4674	.2066
0	24	.9263	.9342	.6958	.7726	.3368
0	26	1.0880	.9439	.8914	.7640	.3271
-4	16	.3077	.2015	.2425	.1666	.1059
-4	20	.7350	.7187	.5257	.6093	.2901
-4	24	1.2420	.8988	1.0390	.7263	.3984
-4	26	1.4070	.7924	1.2010	.6494	.4694

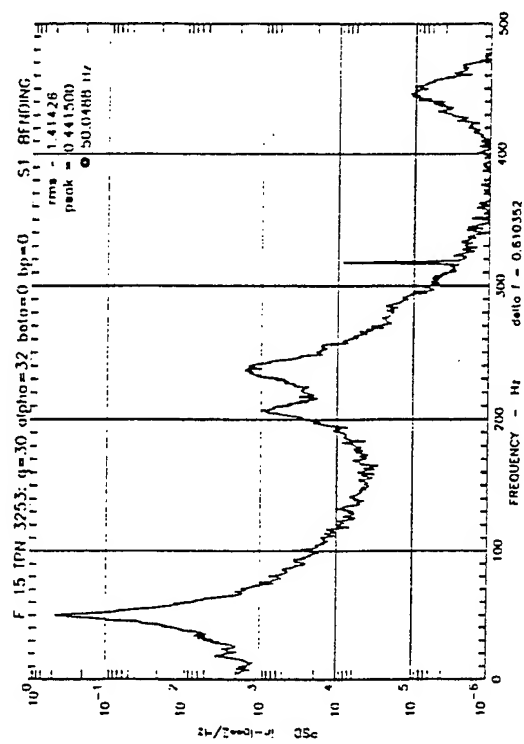
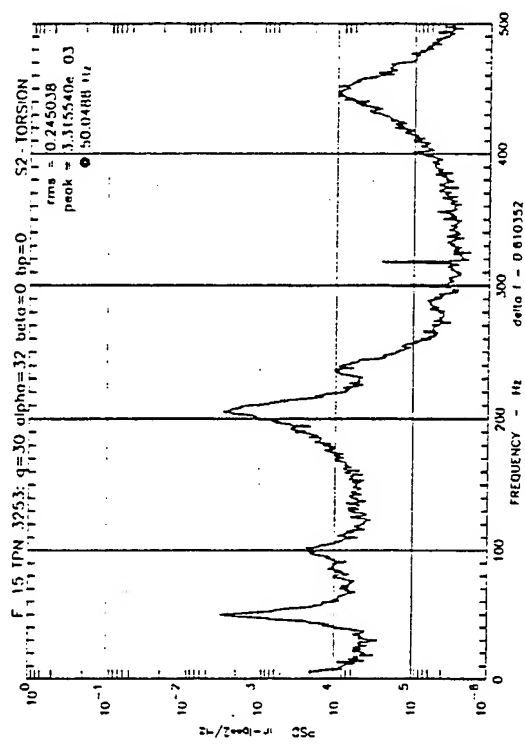
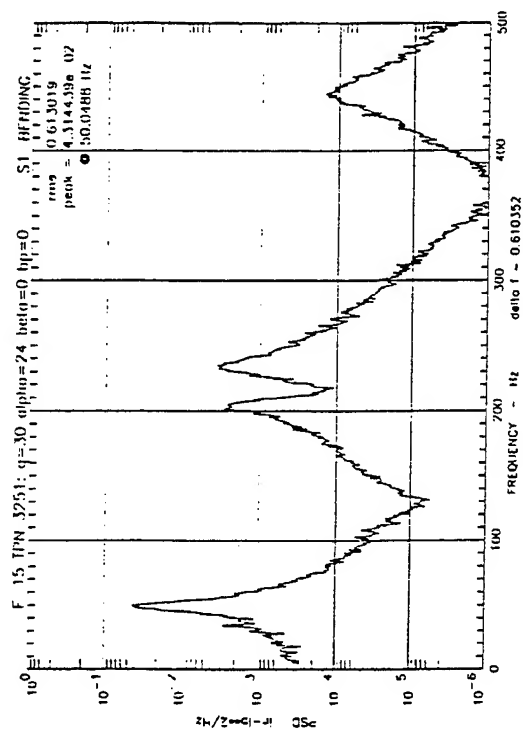
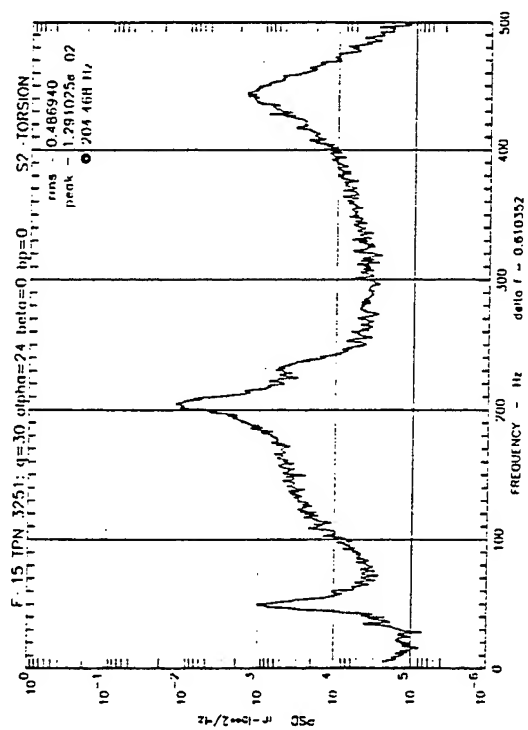
**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION**

**PSD GRAPHS**

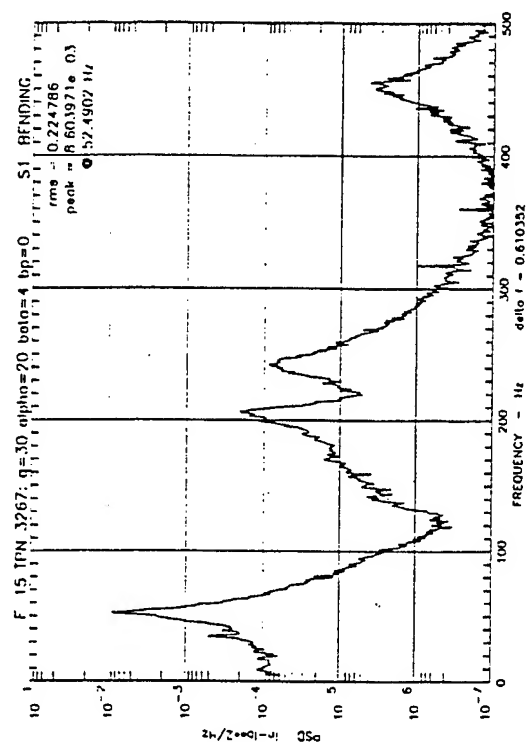
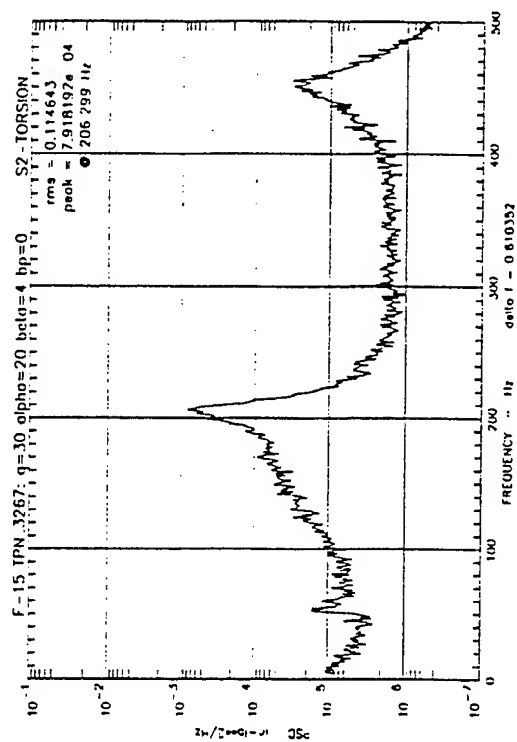
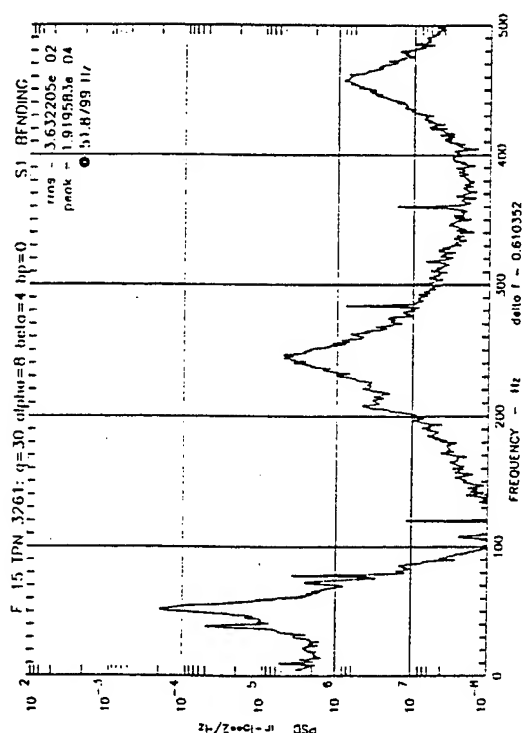
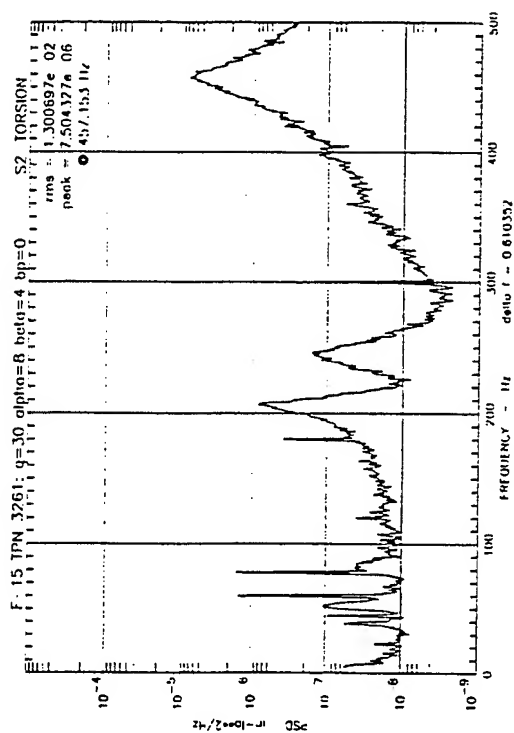
**Q= 30 PSF**

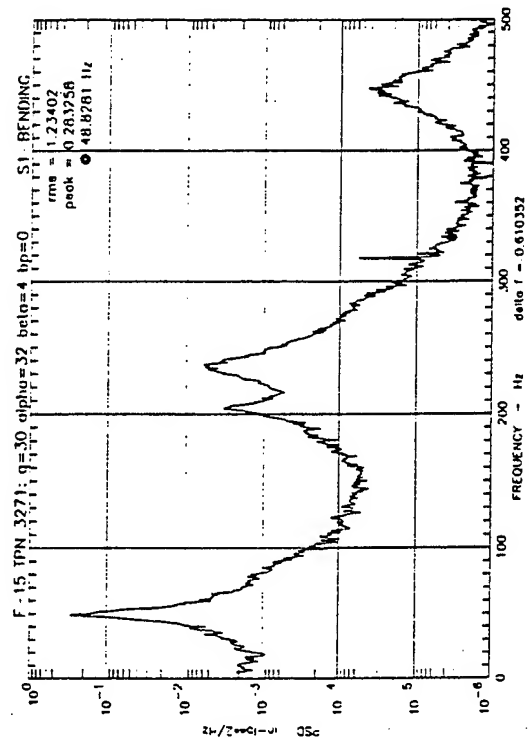
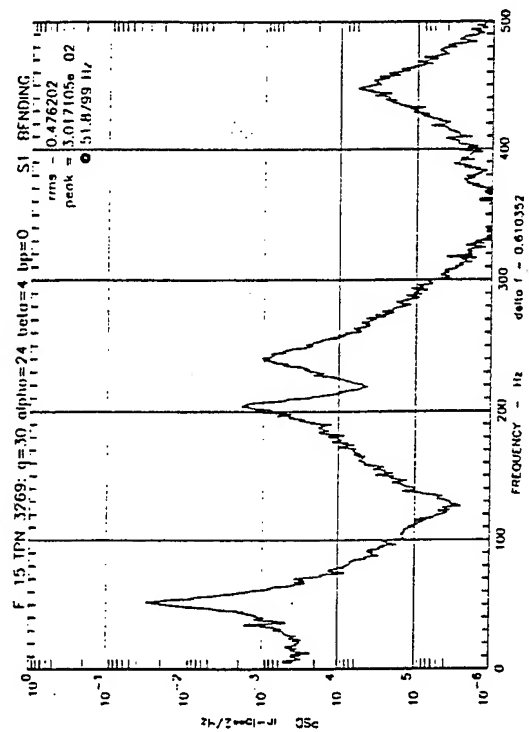
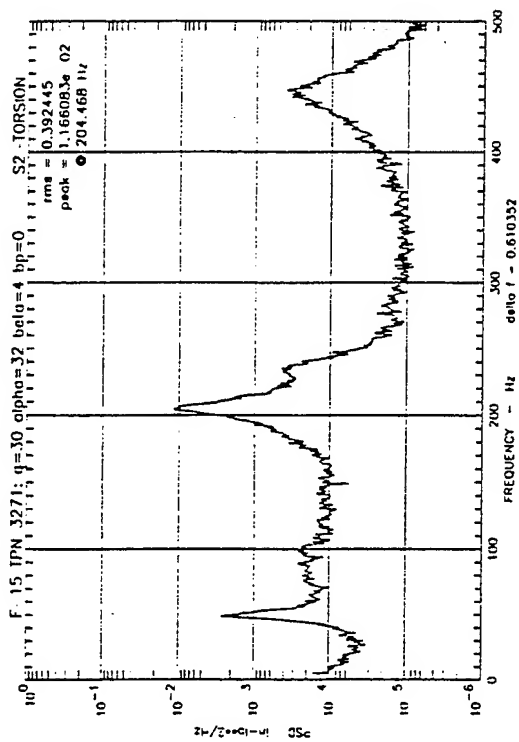
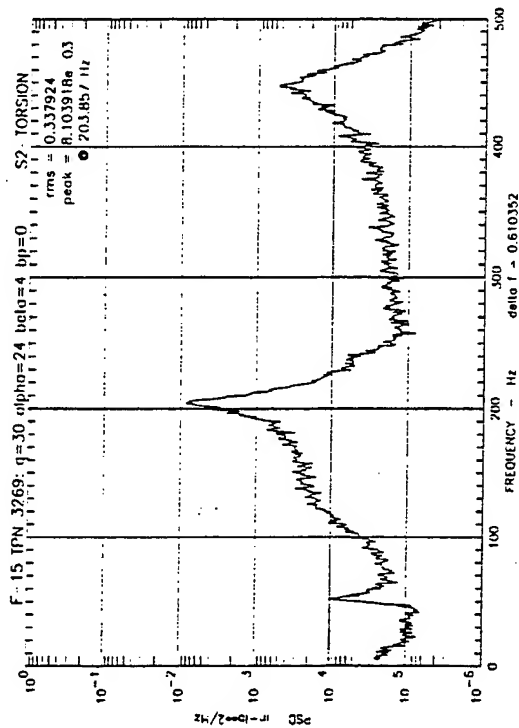
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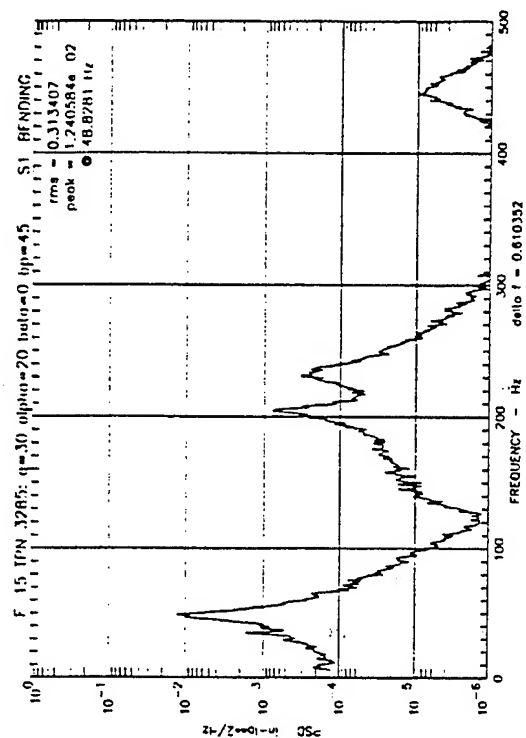
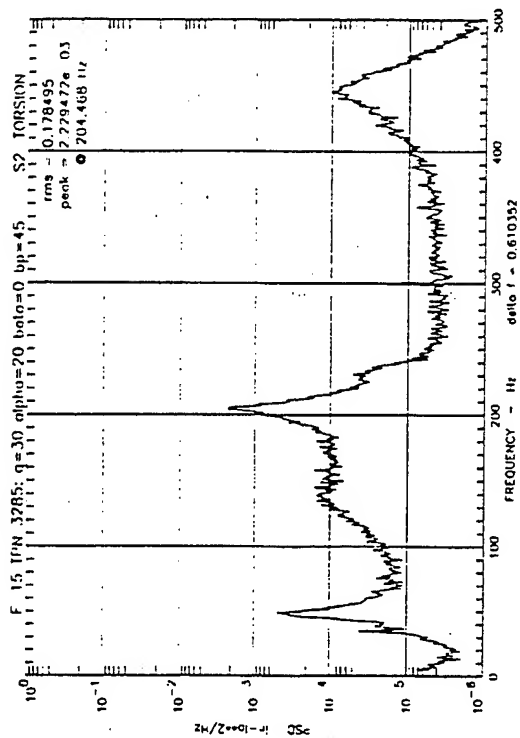
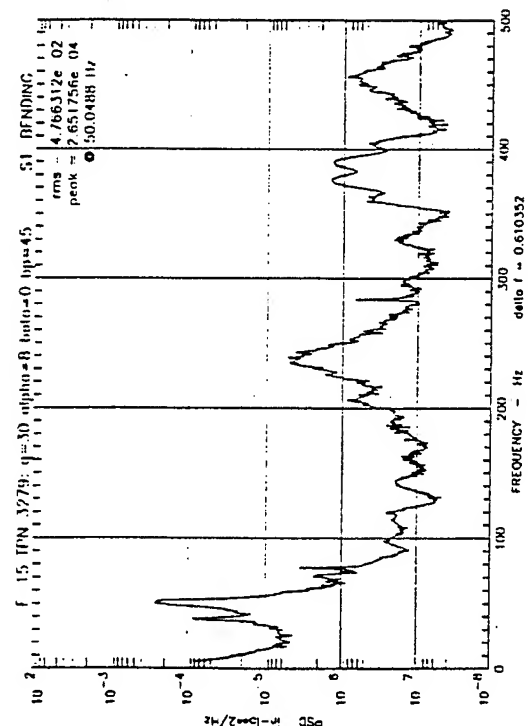
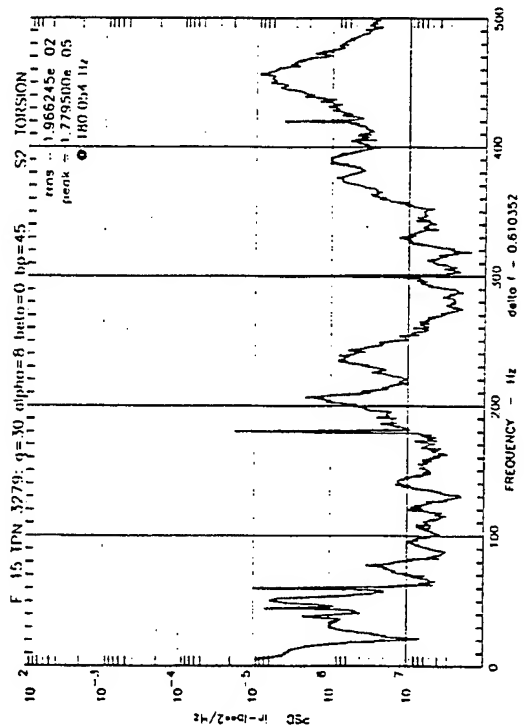


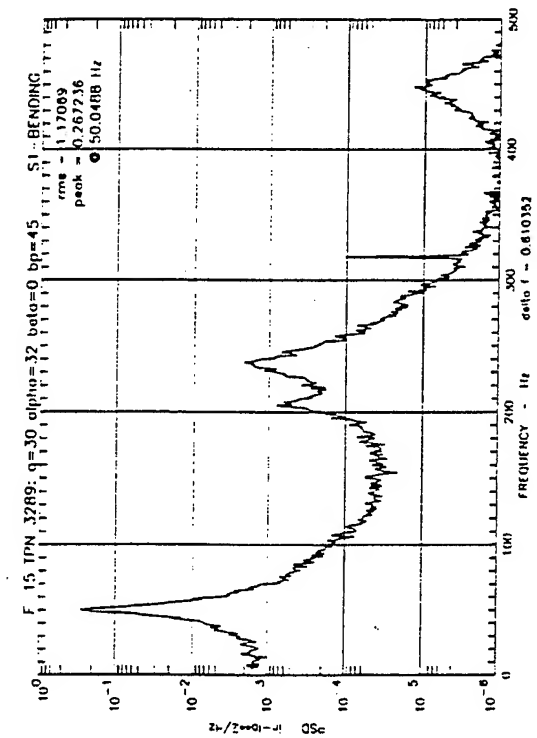
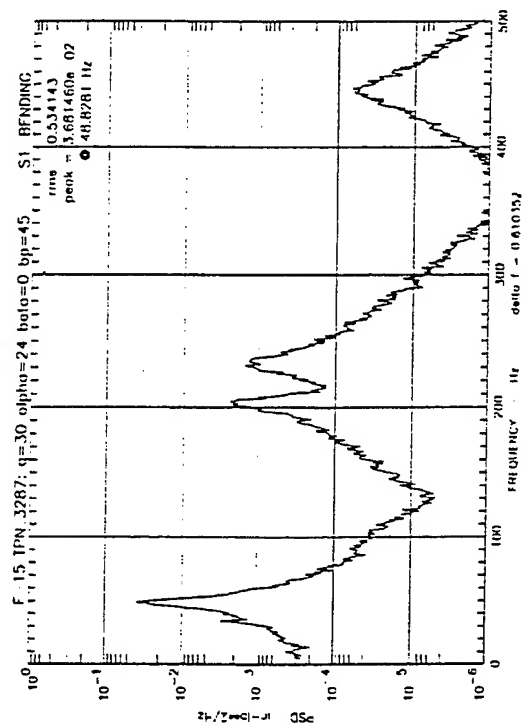
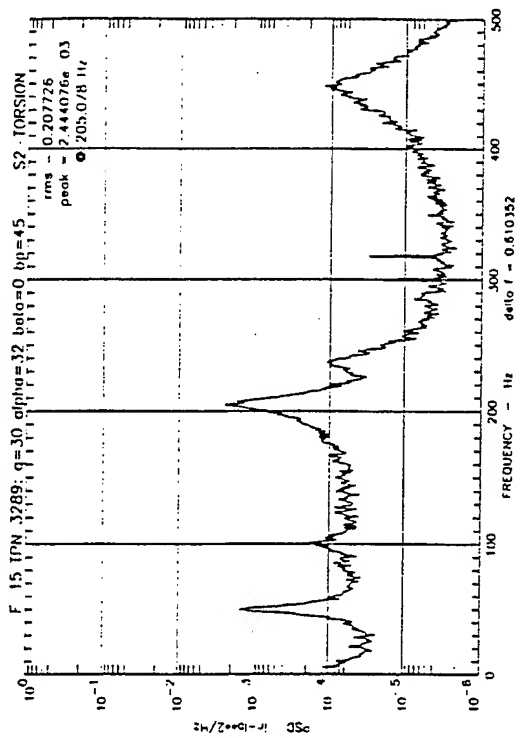
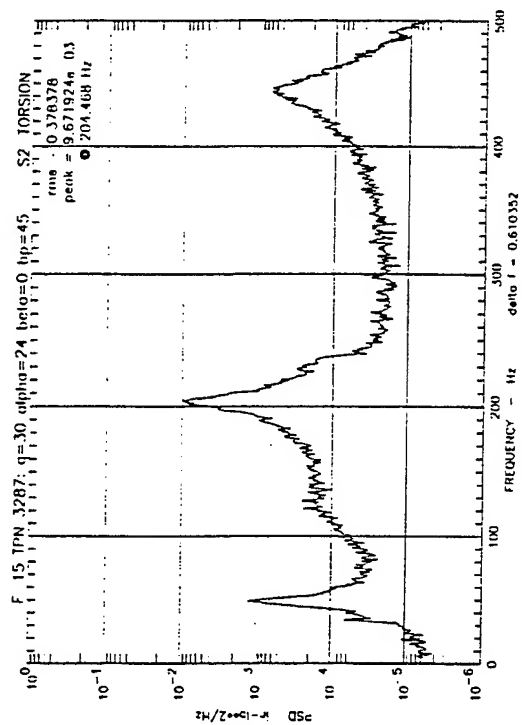


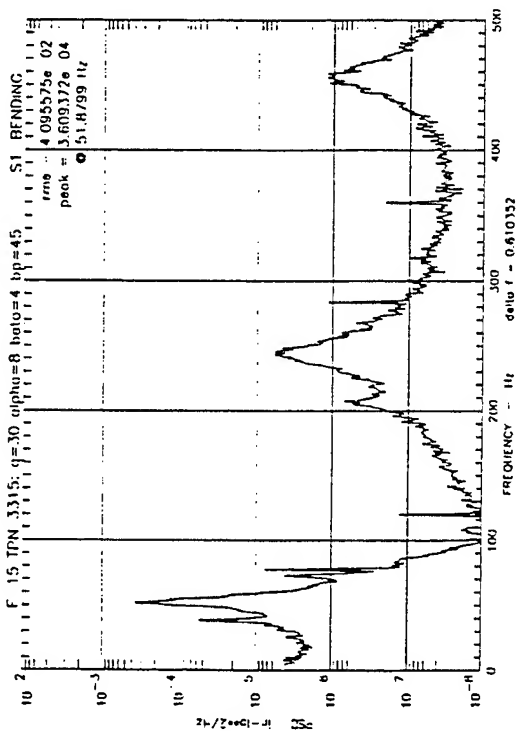
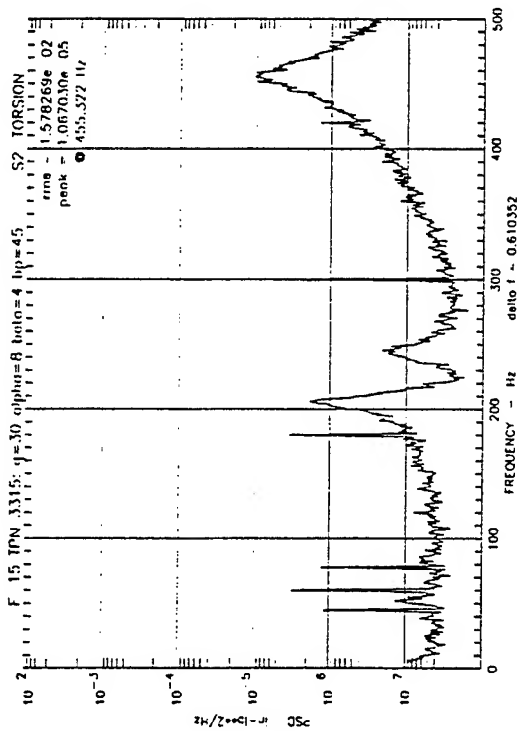
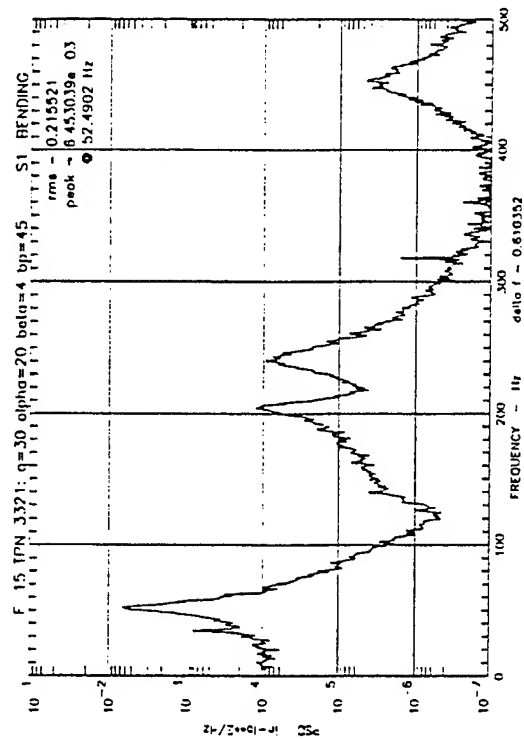
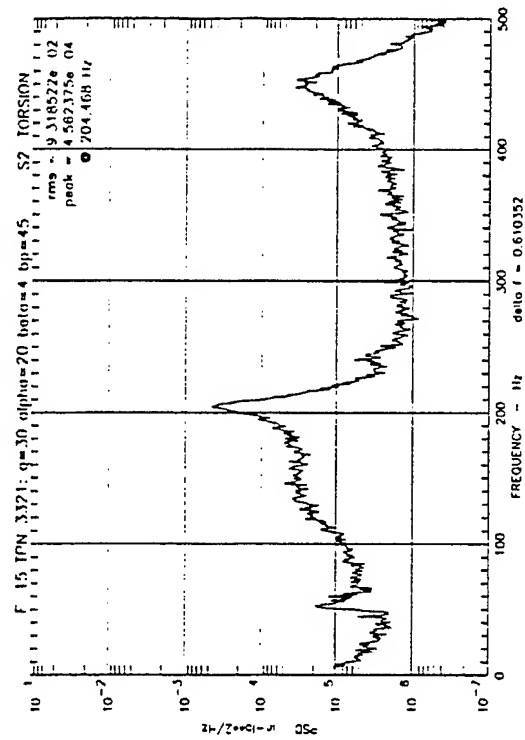


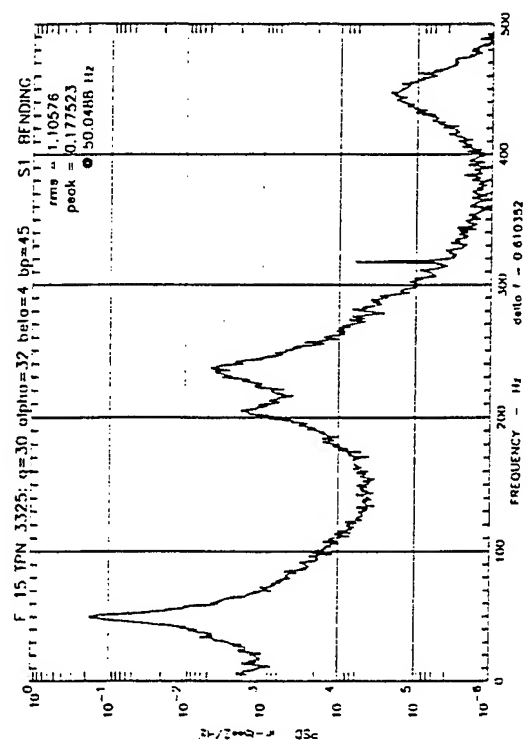
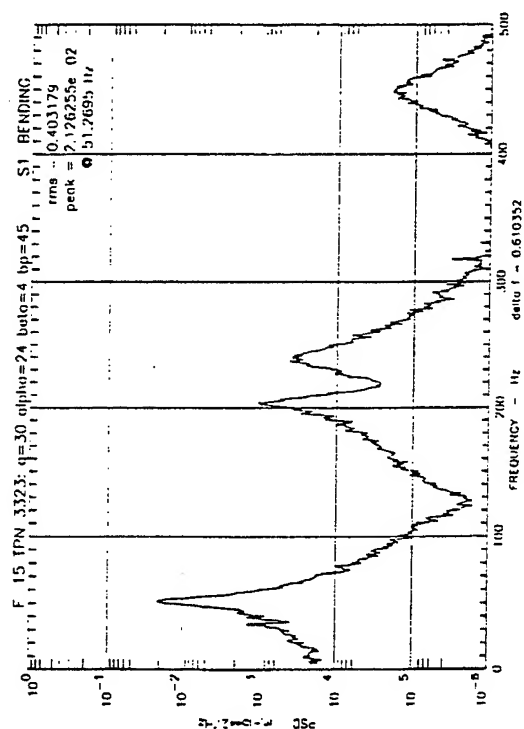
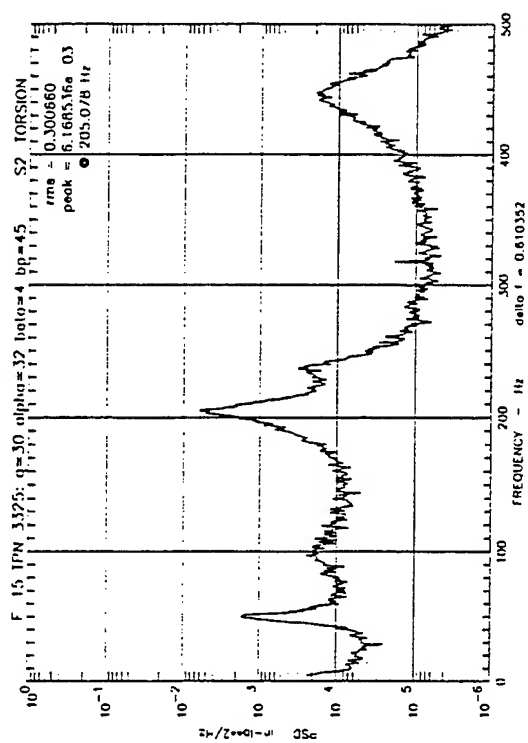
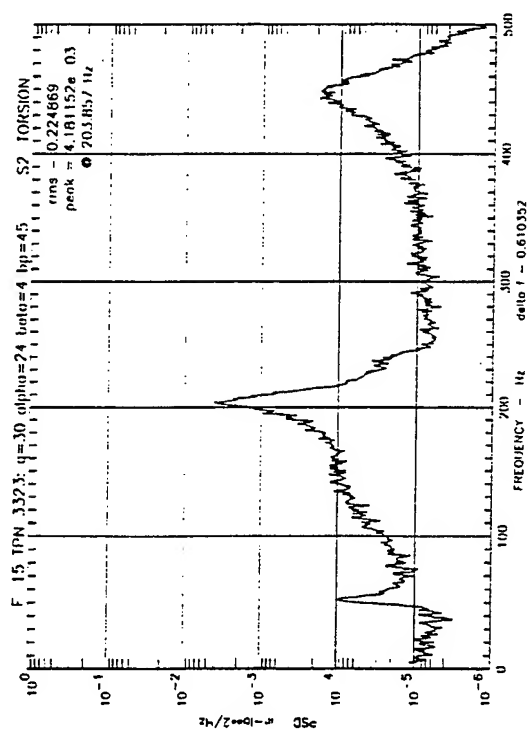


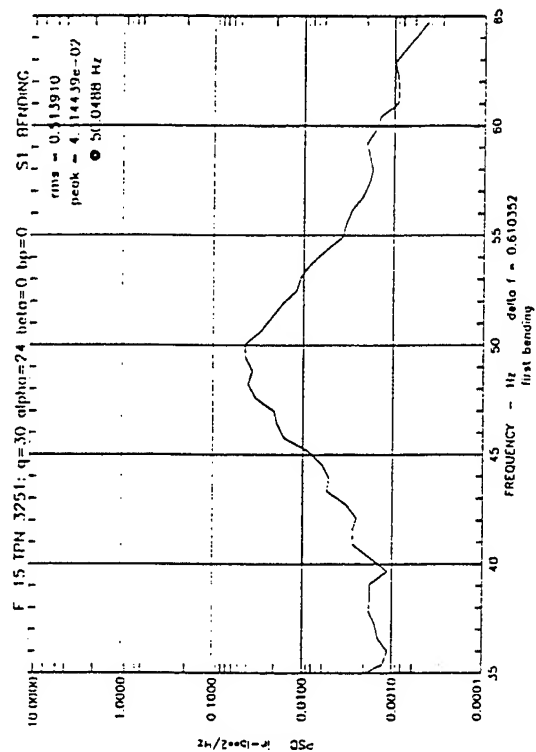
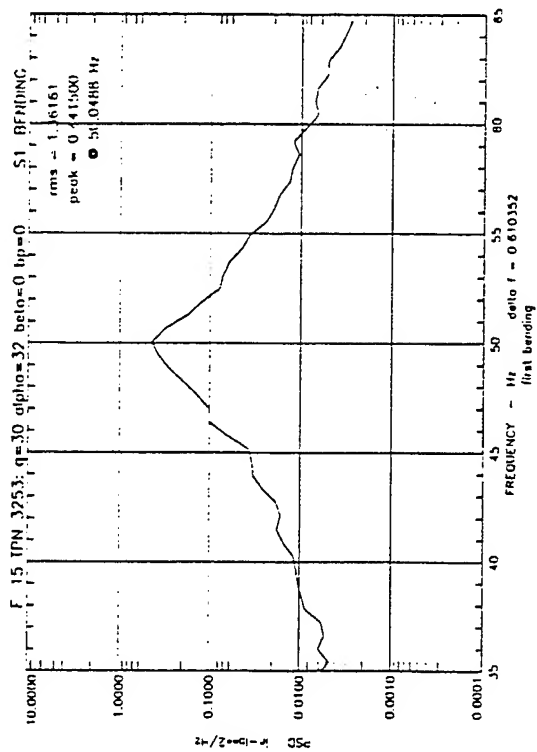
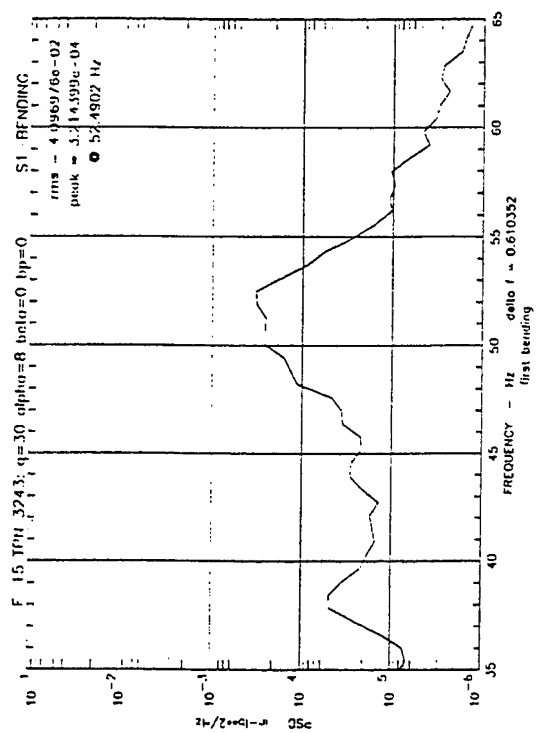
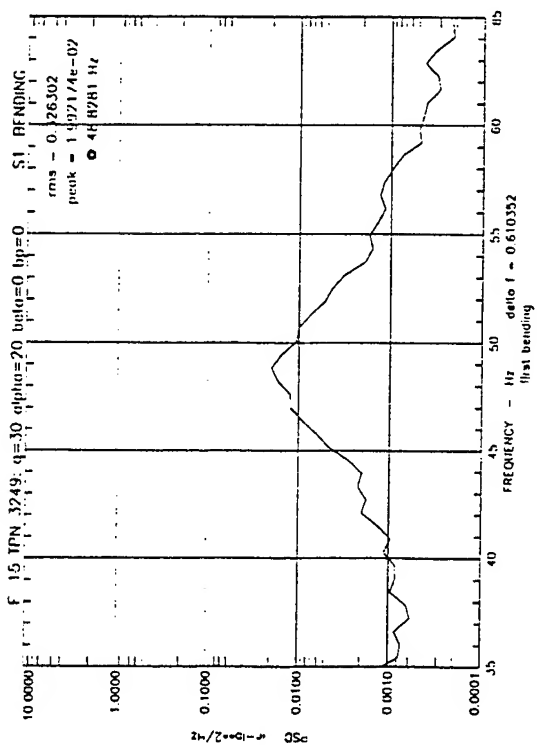


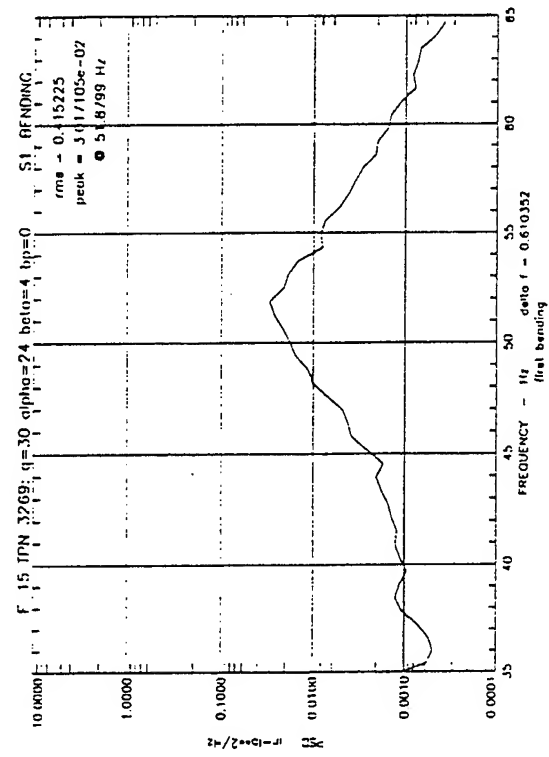
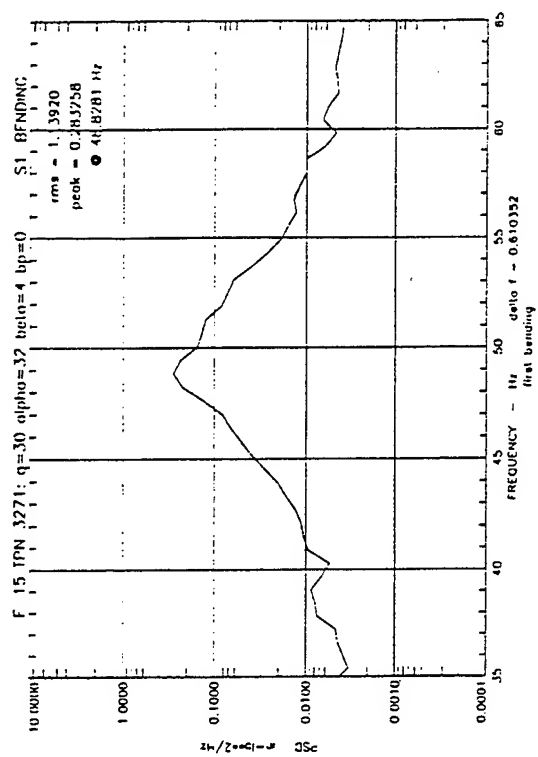
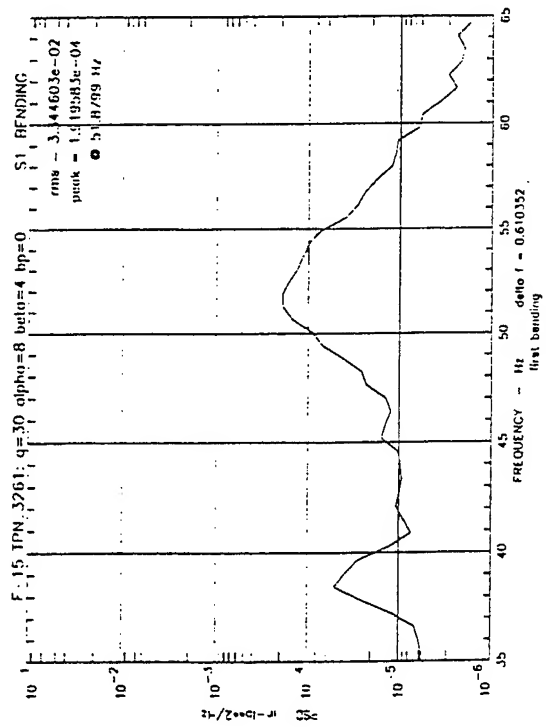
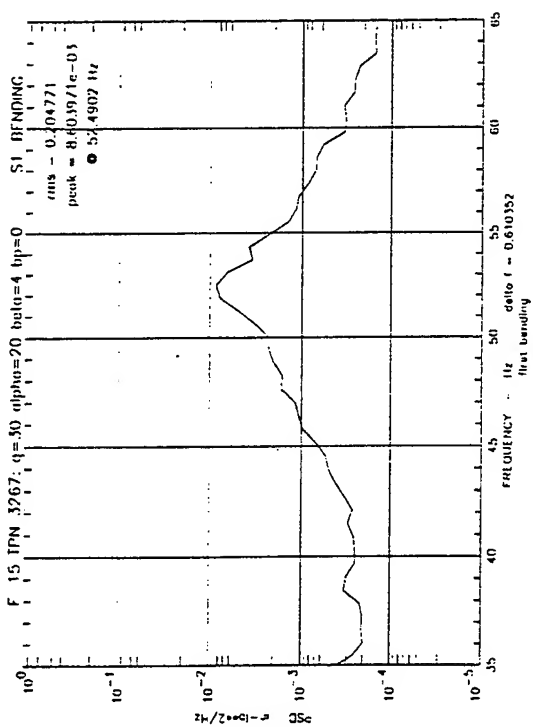




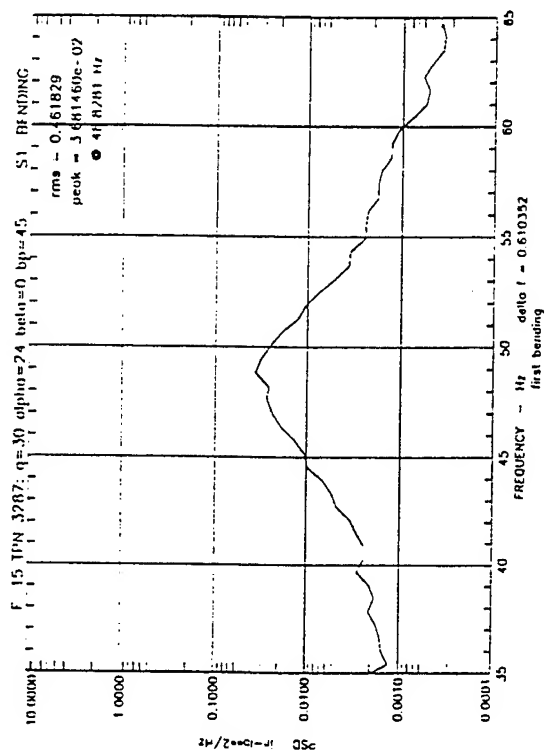
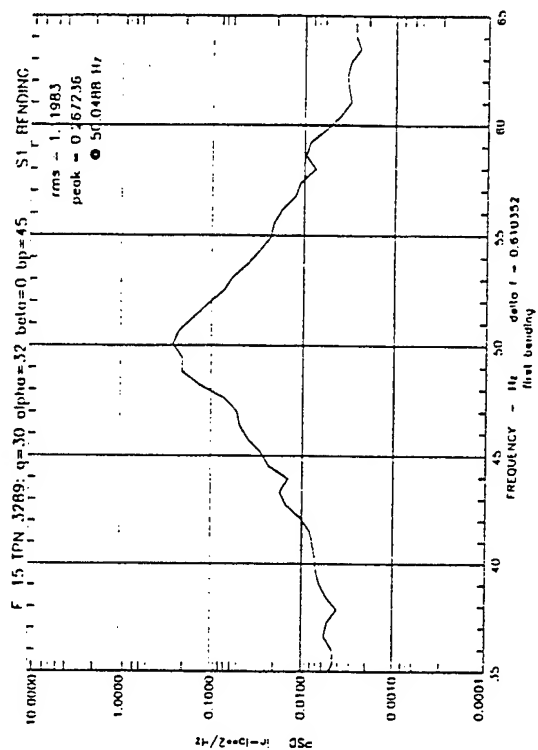
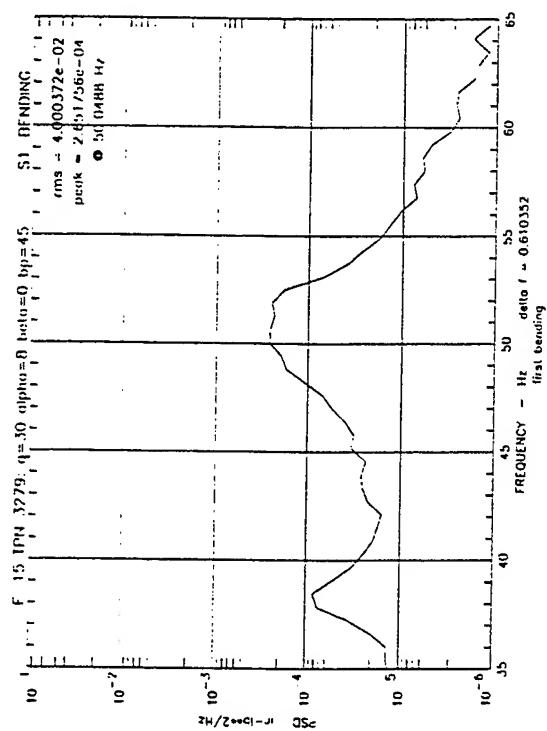
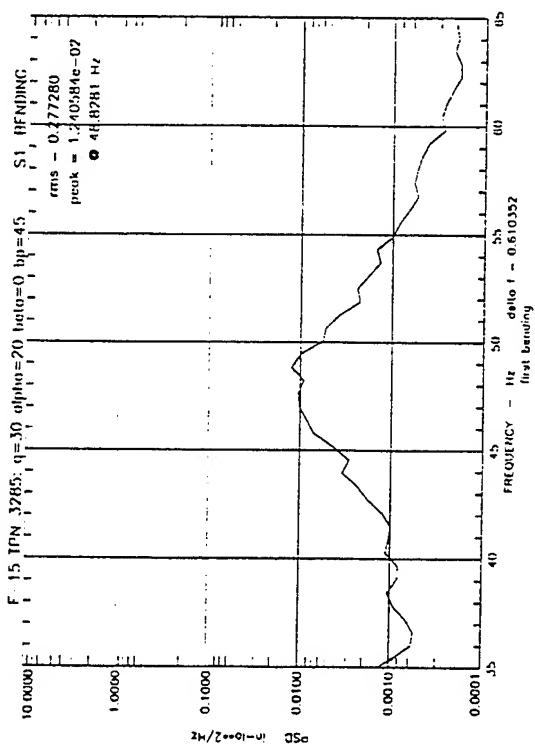


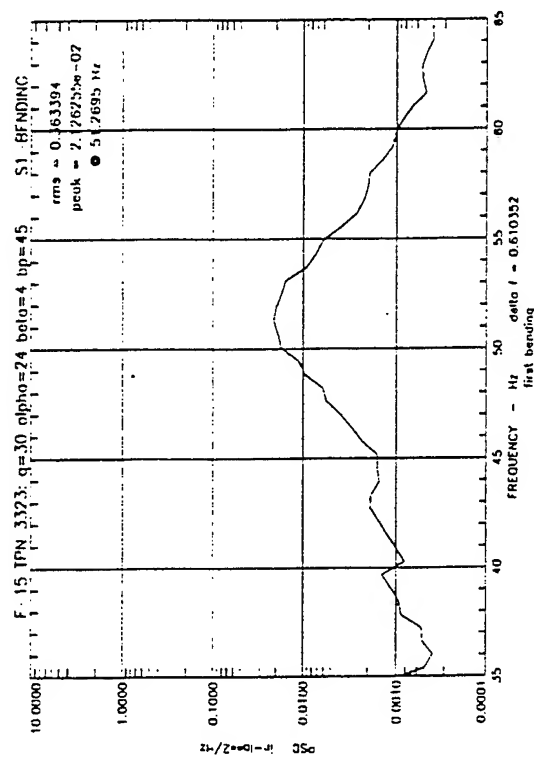
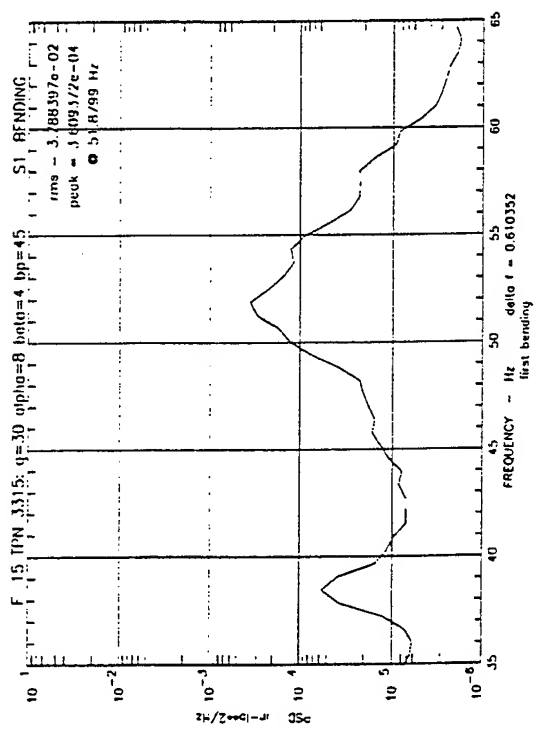
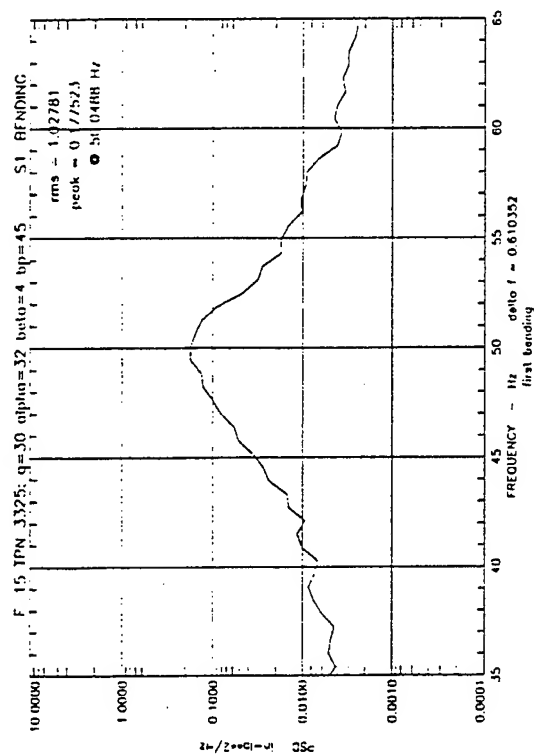
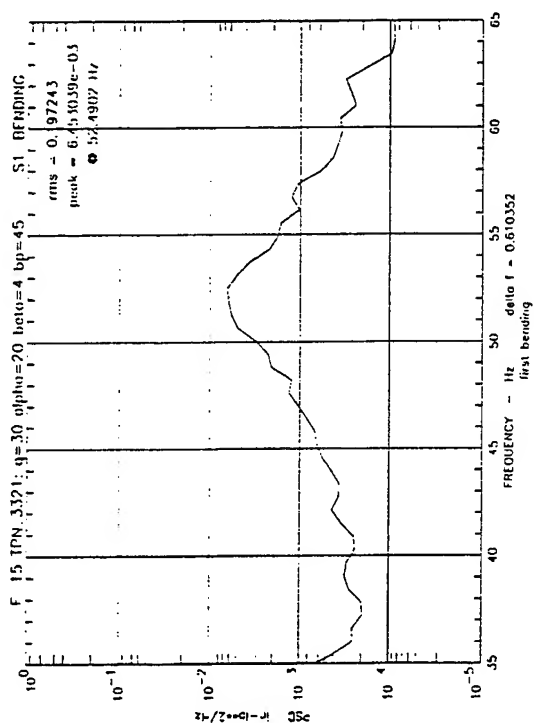


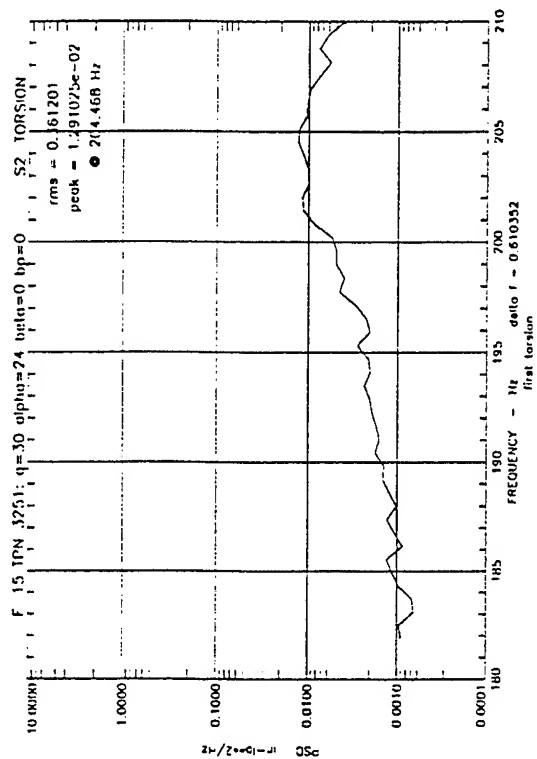
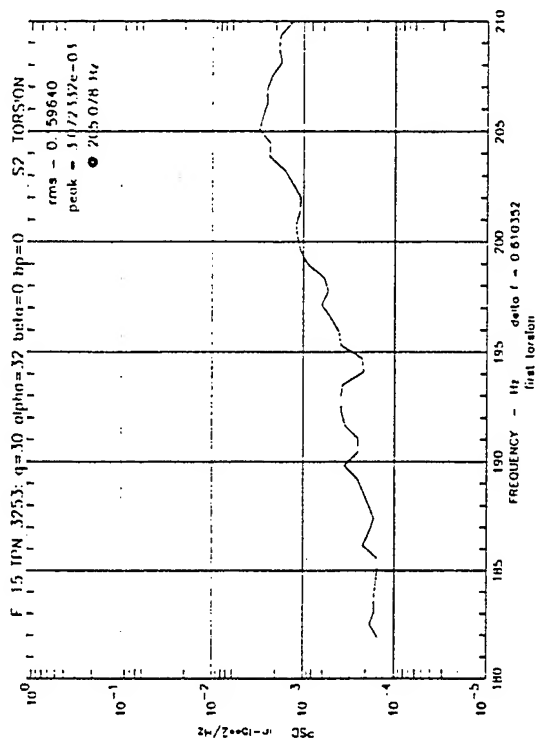
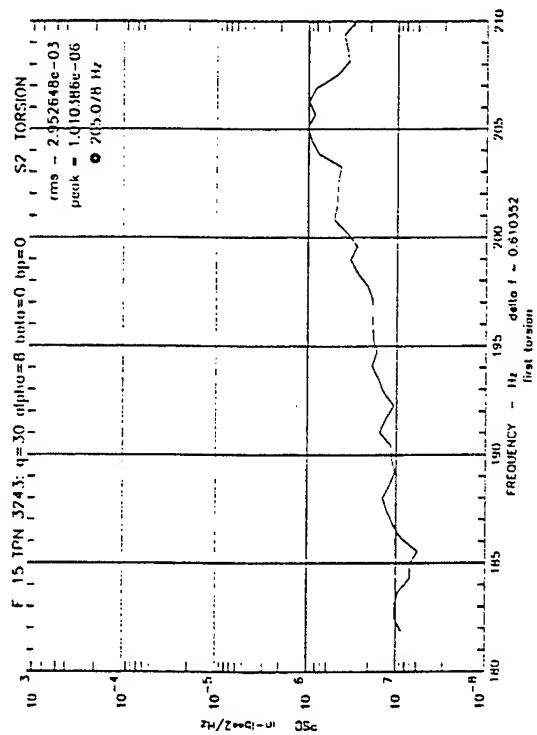
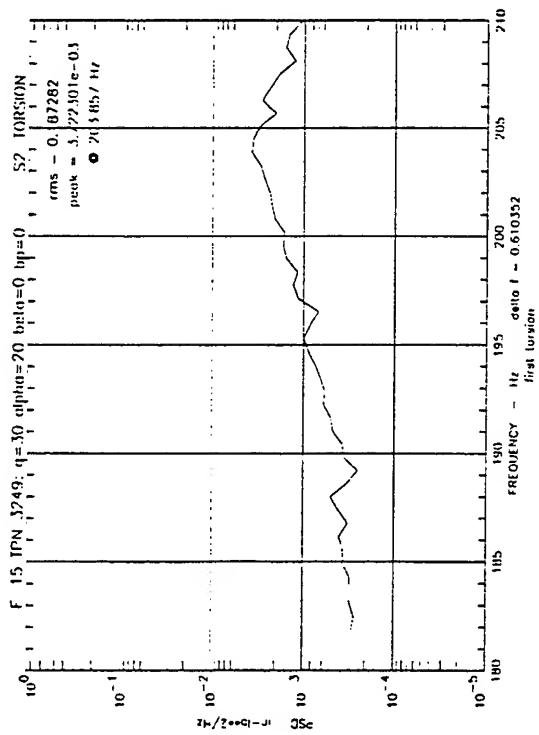


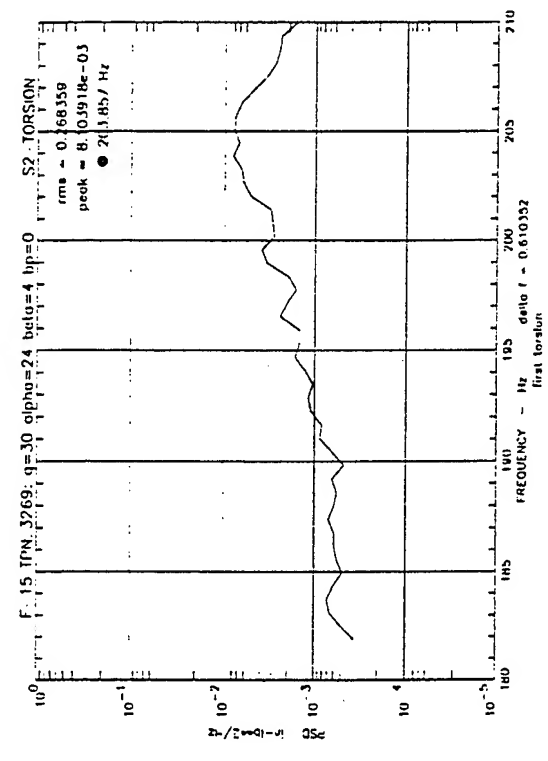
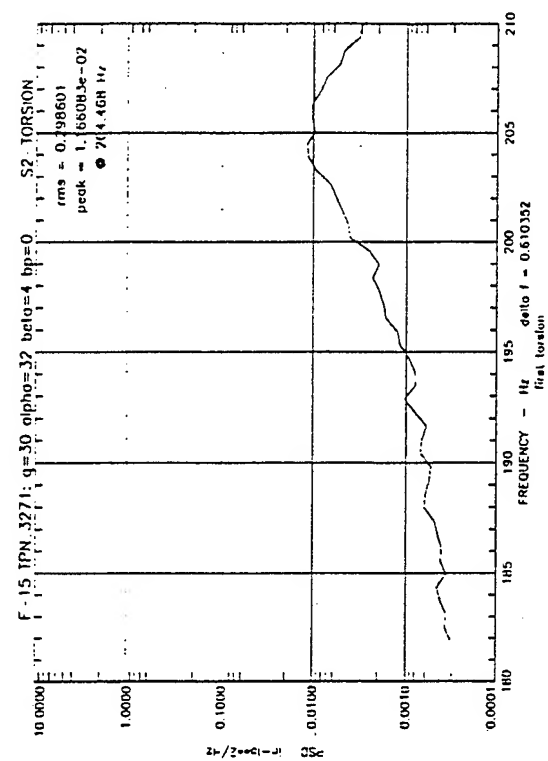
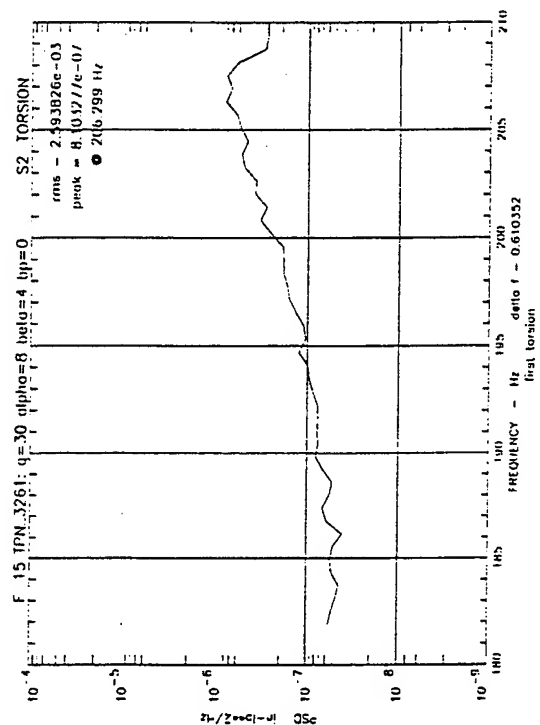
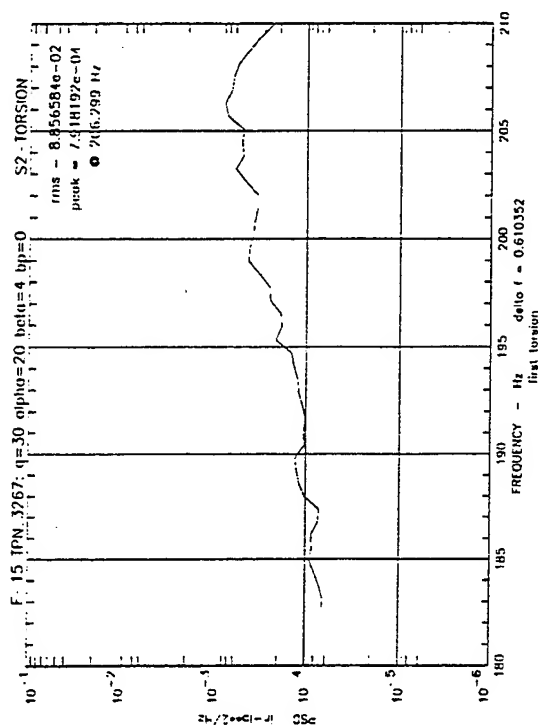


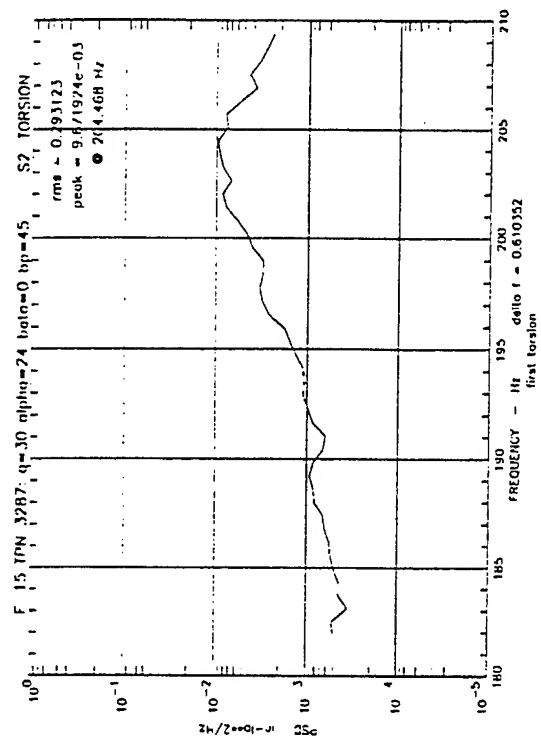
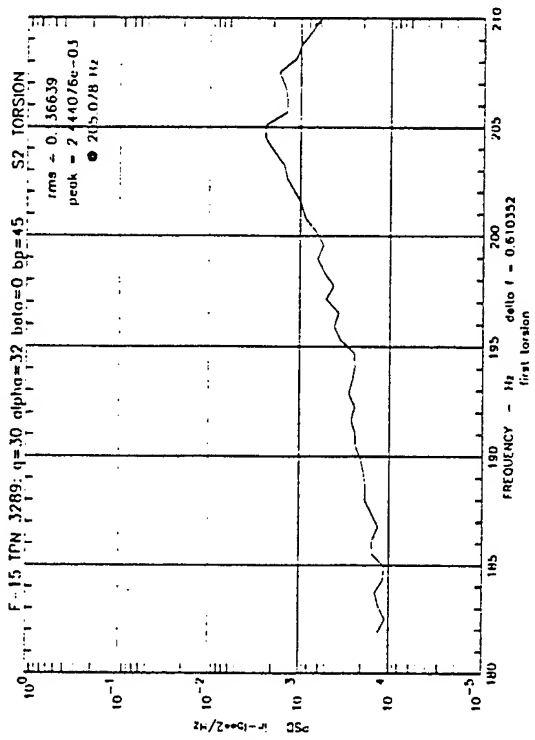
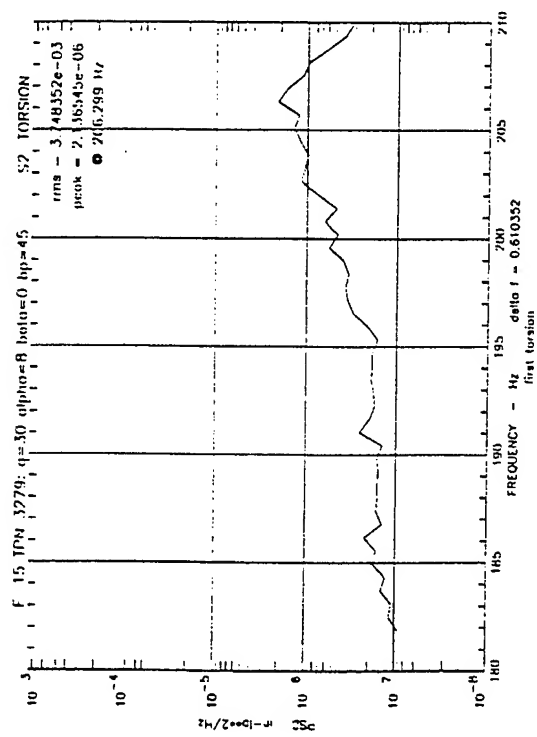
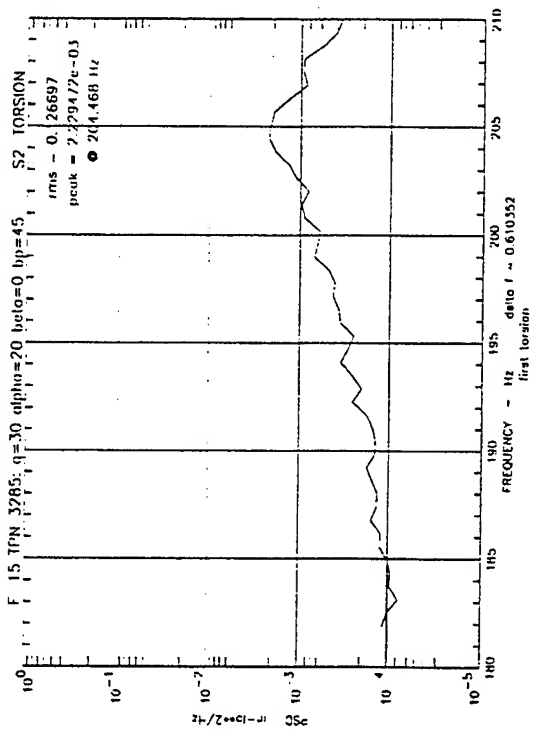


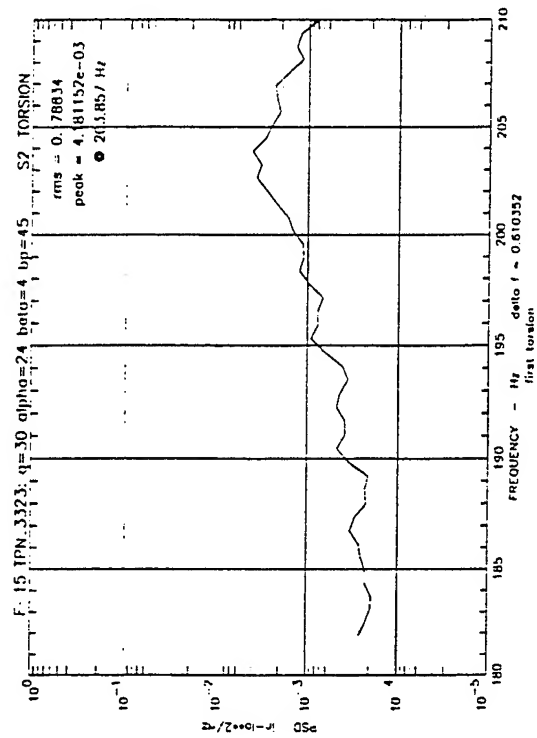
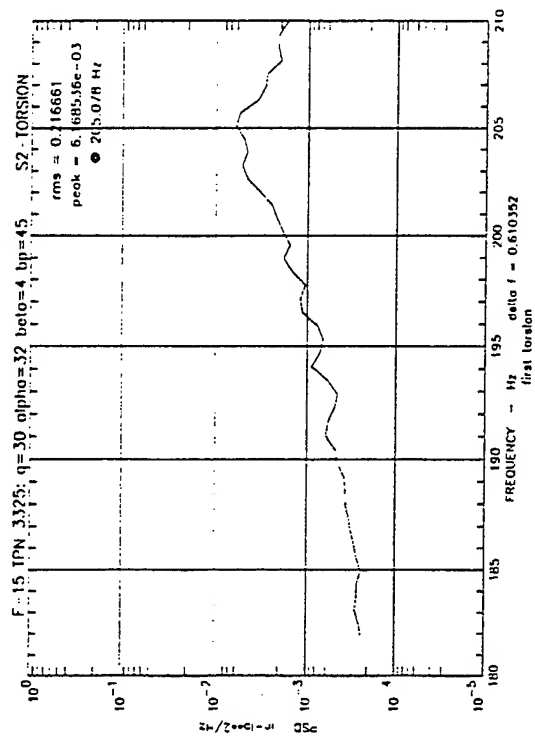
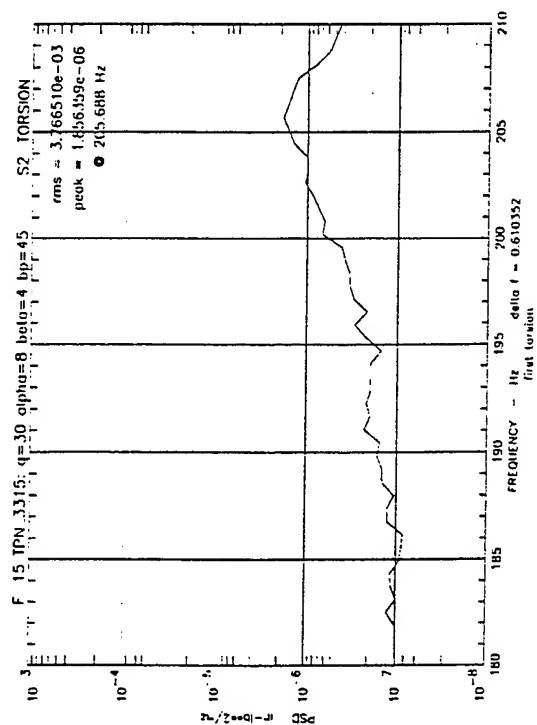
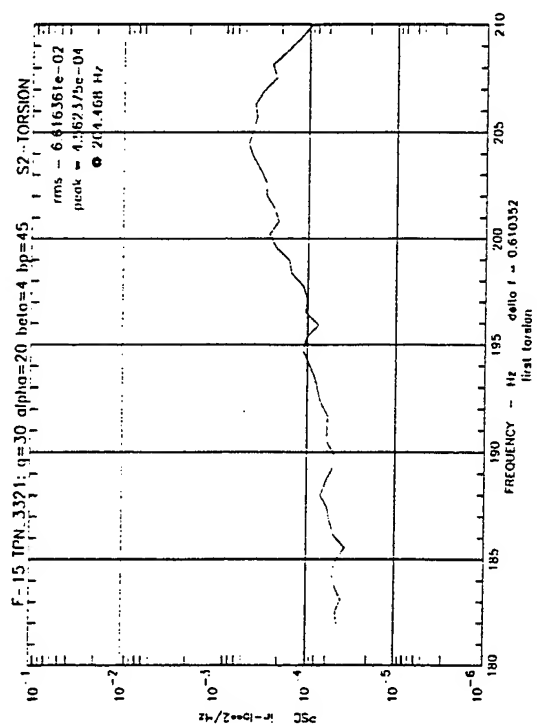


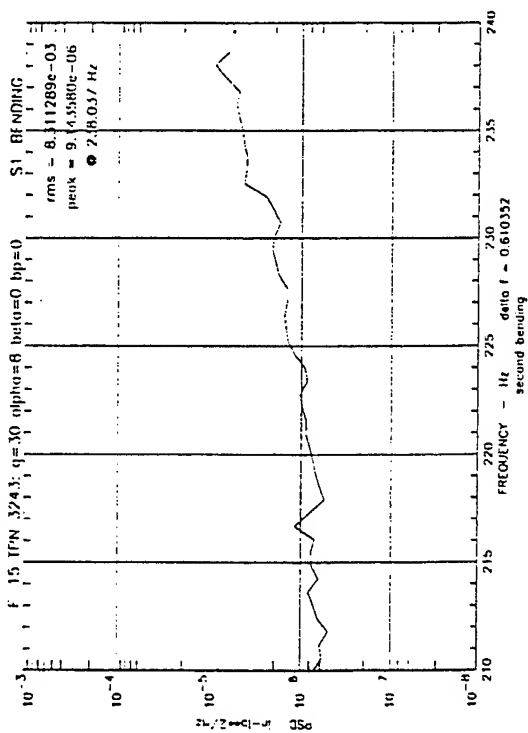
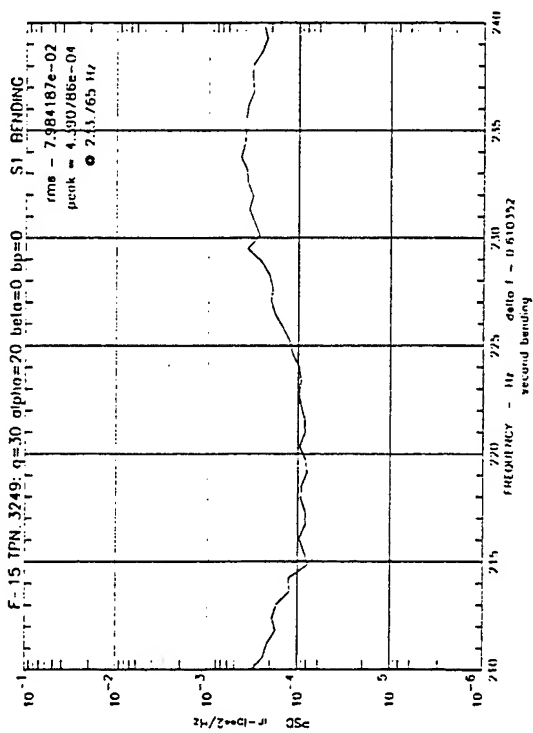
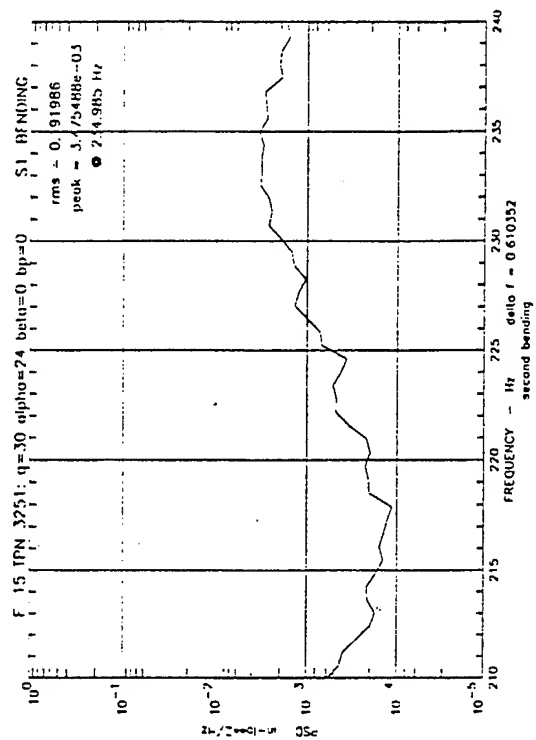
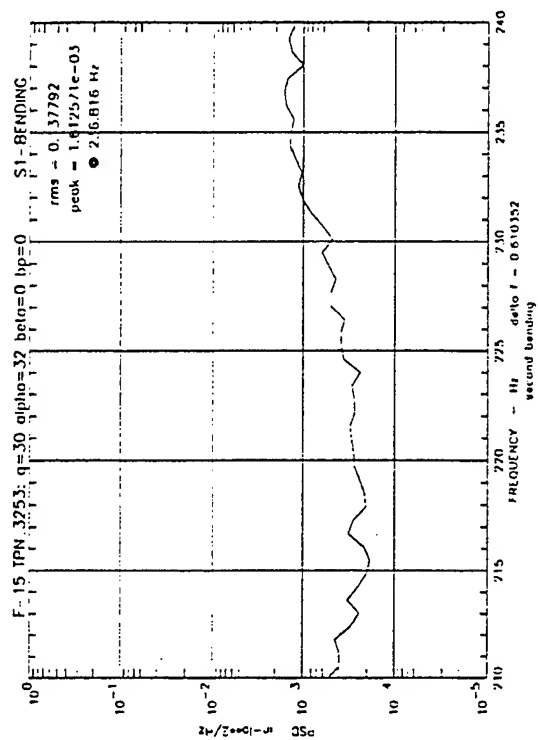


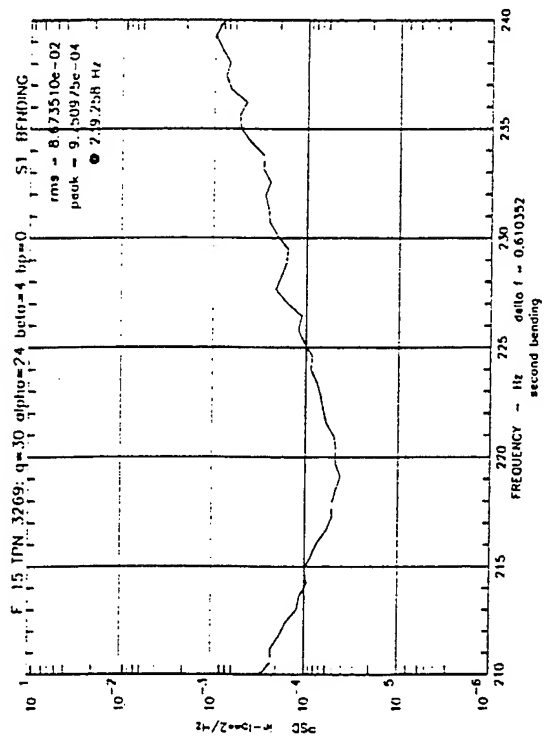
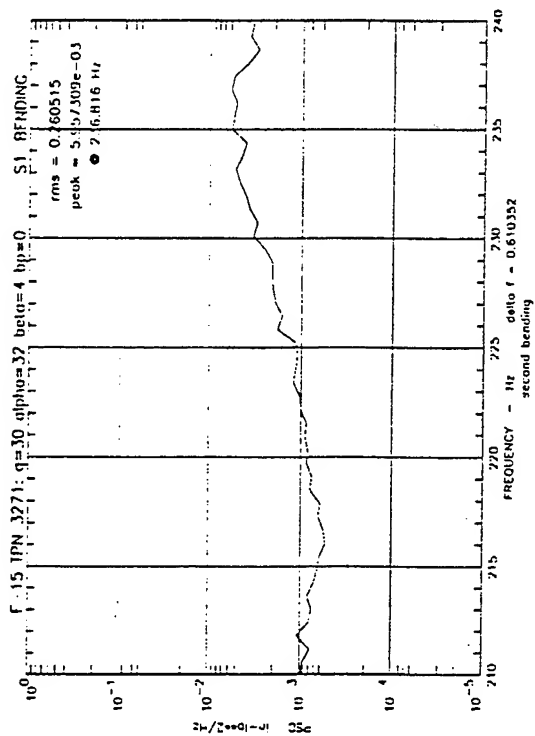
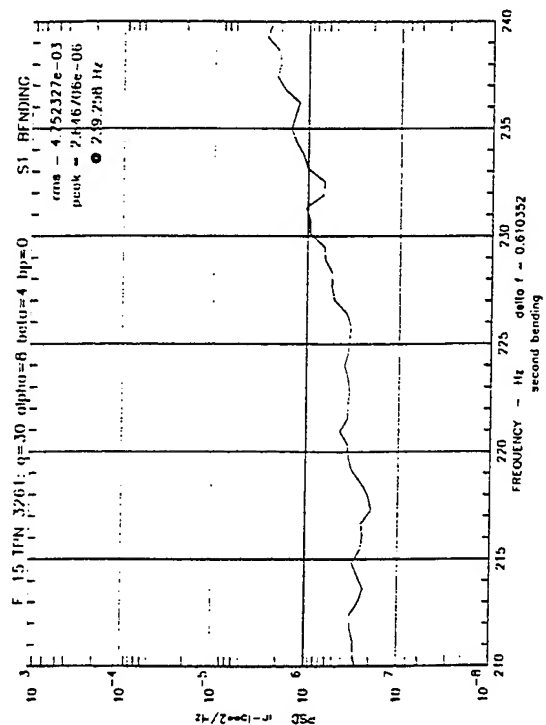
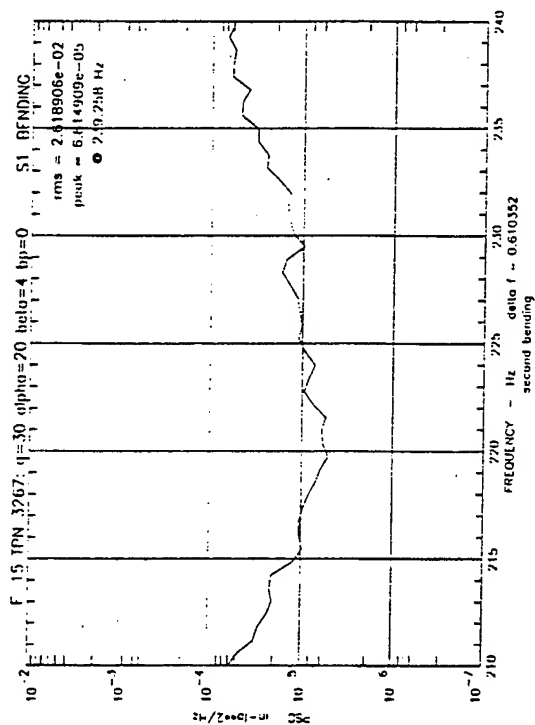




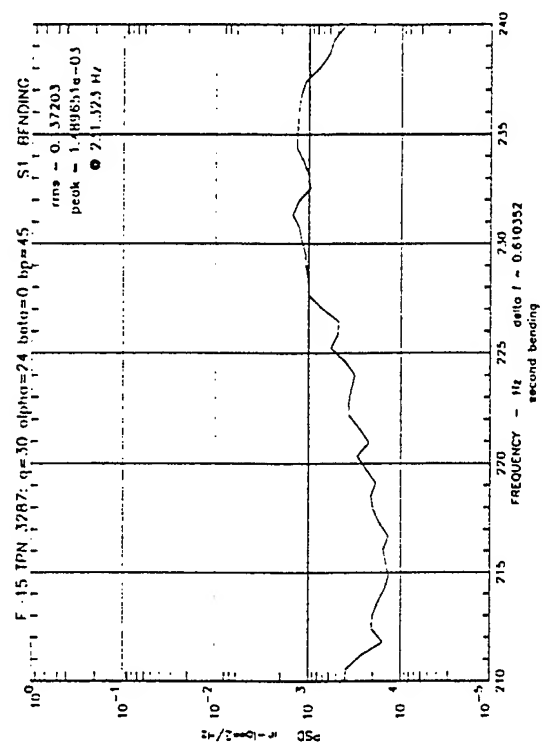
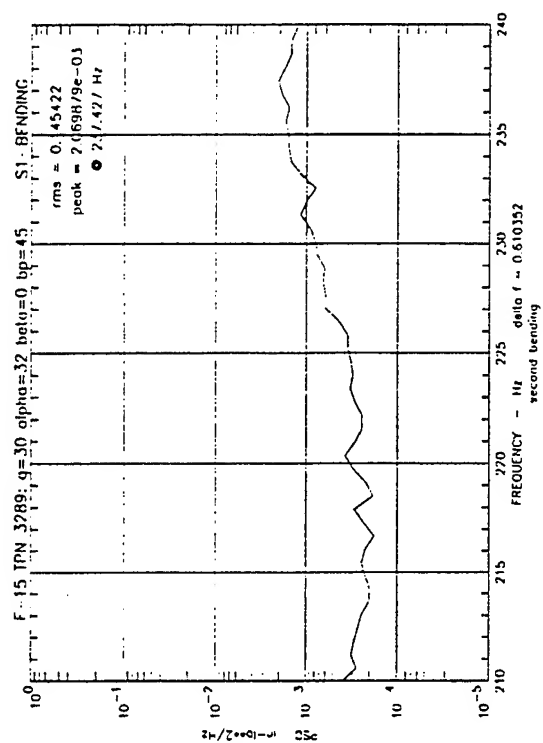
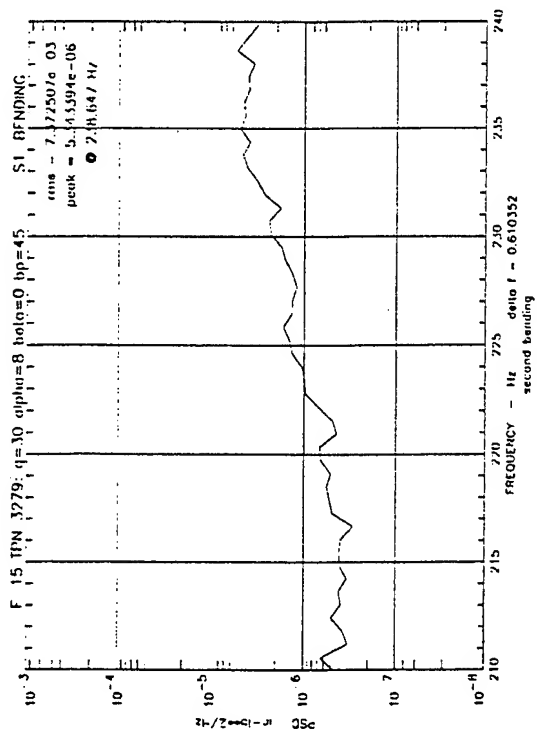
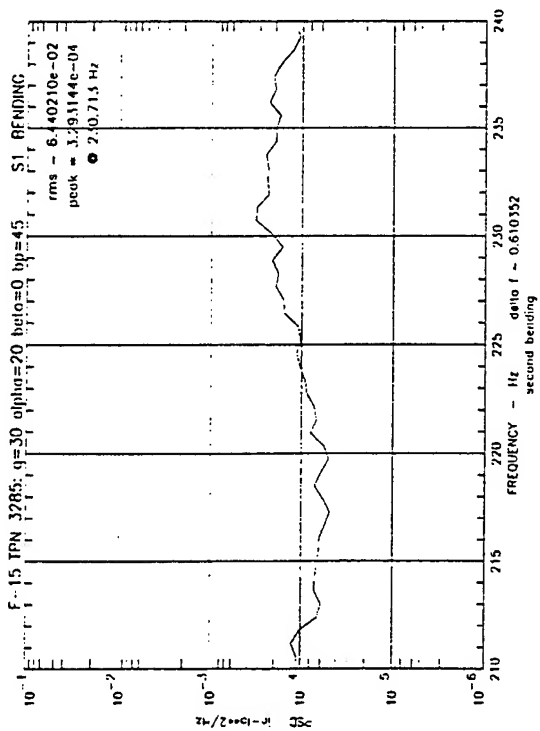


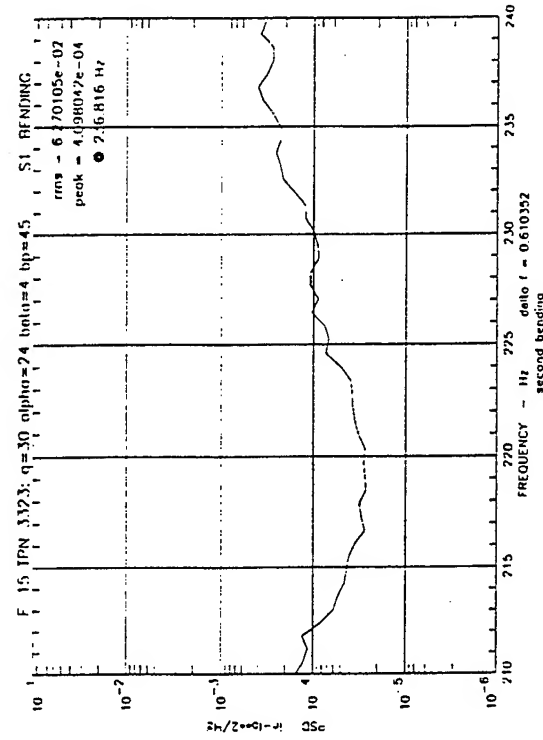
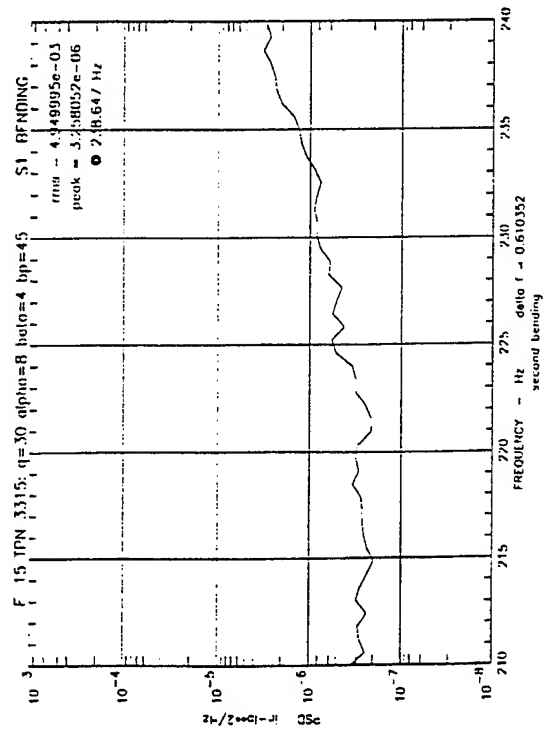
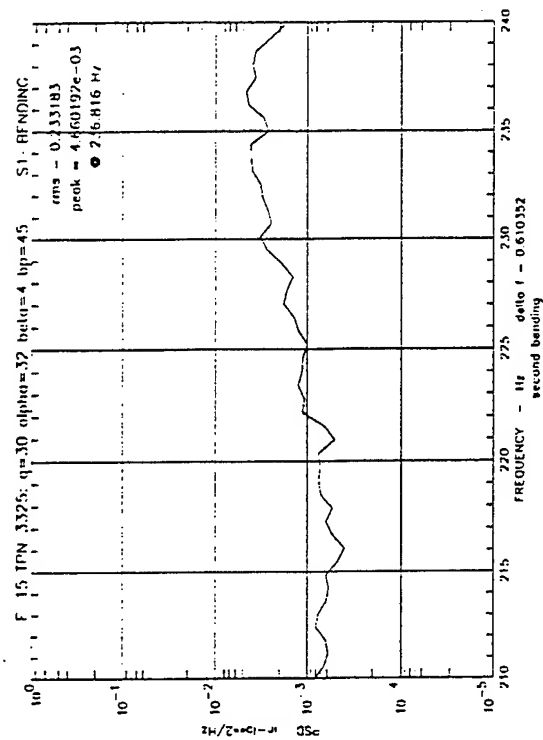
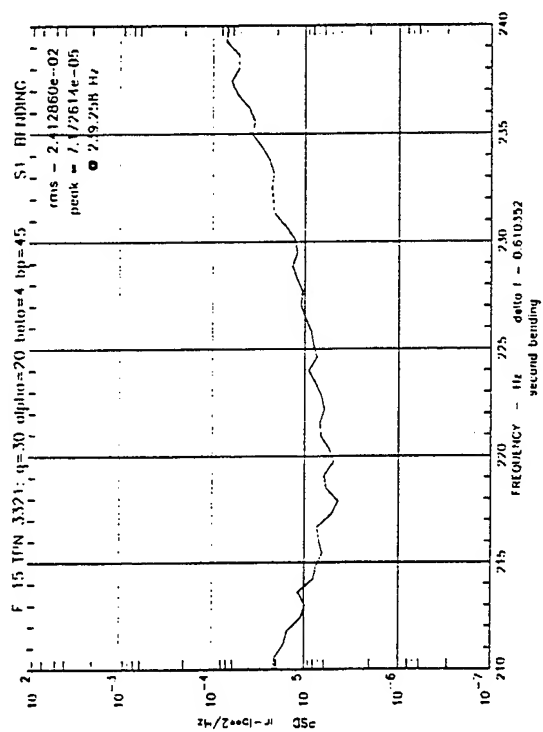












**FLEXIBLE TAIL RESPONSE  
DIMENSIONAL BENDING AND TORSION**

**Q= 30 PSF**

**2.2.2 RMS SUMMARY TABS- WBP =0, 45 psi, BETA = 0, +4, -4,  
ALPHA= 8....32 DEG**

**F-15 Vertical Tail Buffet Test: Overall RMS (in-lb), Q=30 psi**

**0 psi blowing pressure:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	8	.03632	.01300	.03345	.00259	.00475
4	20	.22480	.11460	.20480	.08857	.02619
4	24	.47620	.33790	.41520	.26840	.08674
4	32	1.23400	.39240	1.13900	.29860	.26050
0	8	.04432	.01743	.04100	.00295	.00831
0	20	.37270	.24610	.32630	.18730	.07984
0	24	.61300	.48690	.51390	.36120	.19200
0	32	1.41400	.24500	1.36200	.15960	.13780

**45 psi blowing pressure:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	8	.04100	.01578	.03788	.00377	.00495
4	20	.21550	.09318	.19720	.06616	.02413
4	24	.40320	.22490	.36340	.17880	.06270
4	32	1.10600	.30070	1.02800	.21670	.23320
0	8	.04766	.01966	.04000	.00375	.00737
0	20	.31340	.17850	.27730	.12670	.06440
0	24	.53410	.37840	.46180	.29310	.13720
0	32	1.17100	.20770	1.12000	.13660	.14540

*9/20/80 John P. H.*

Pages 226 through 248 have been omitted because they were a duplication of previous data.

### **3. NONDIMENSIONAL BENDING AND TORSION DATA**

#### **3.1 Q = 56 PSF**

##### **3.1.1 PSD GRAPHS**

**3.1.1.1 WBP = 0, 45, 65 psi**

**3.1.1.2 GBP = 65 psi**

**3.1.1.3 GBP = 65 psi, WBP = 65 psi**

**3.1.1.4 NBP = 87 psi**

**3.1.1.5 NBP = 87 psi, GBP = 65 psi**

**3.1.1.6 NBP = 87 psi, WBP = 65 psi**

##### **3.1.2 RMS SUMMARY TABLES**

#### **3.2 Q = 30 PSF**

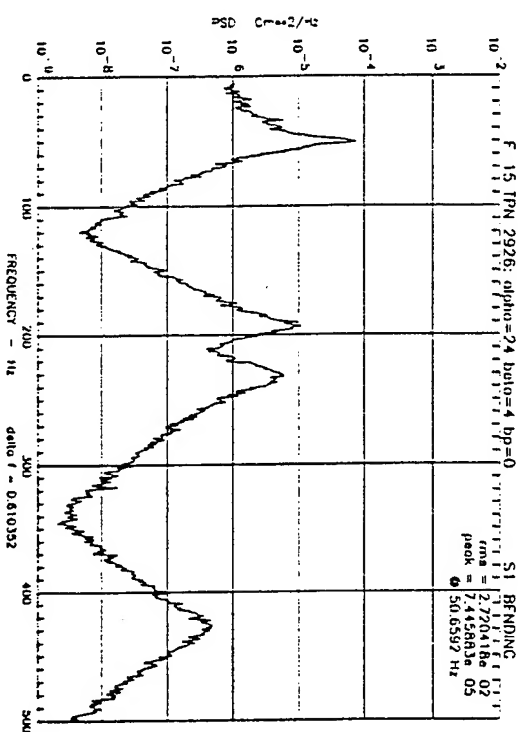
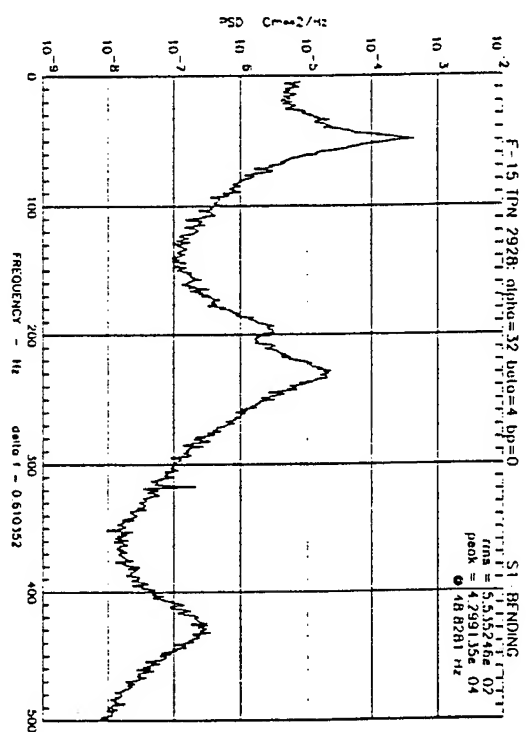
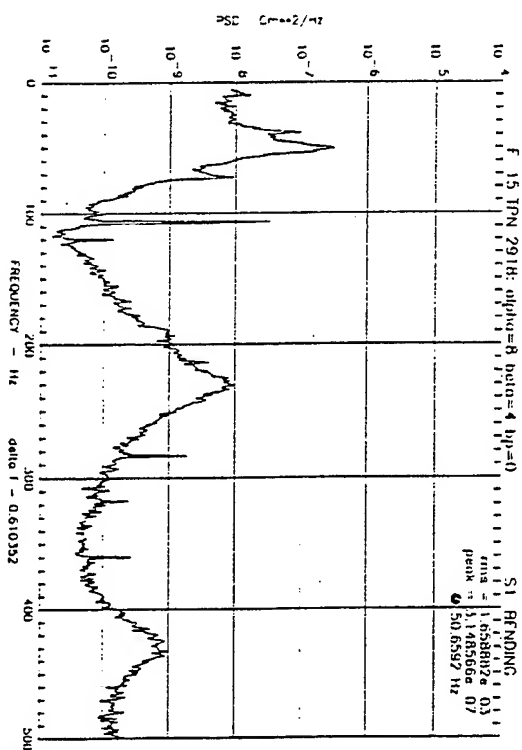
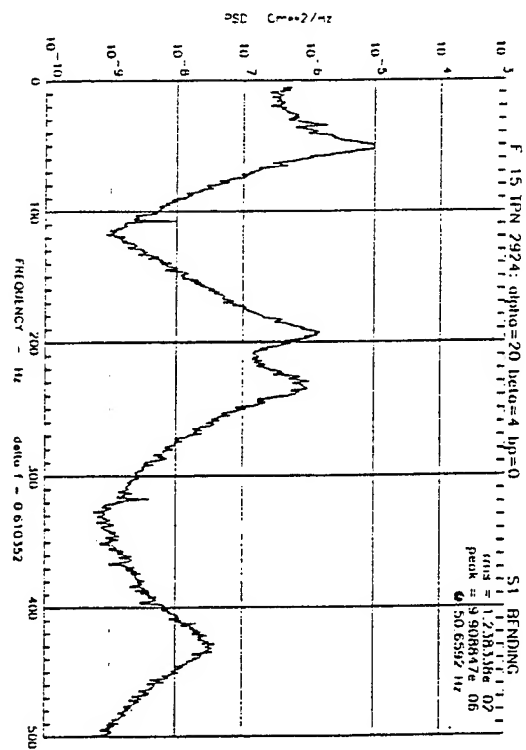
**3.2.1 PSD GRAPHS - WBP = 0, 45 psi**

**3.2.2 RMS SUMMARY TABLES**

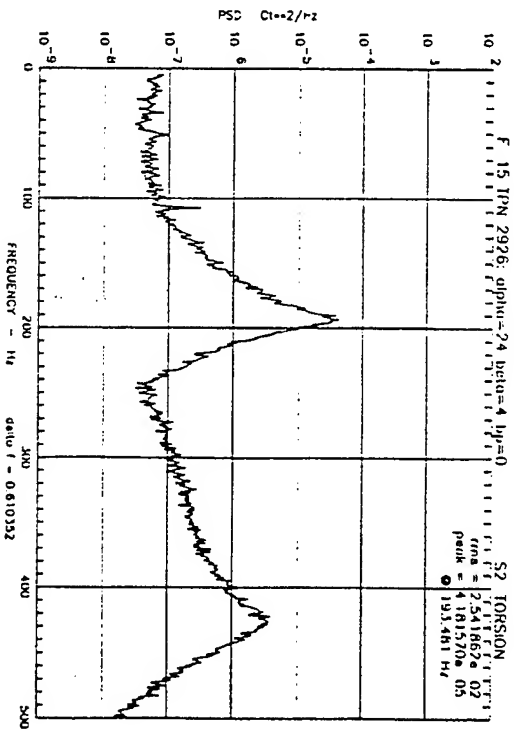
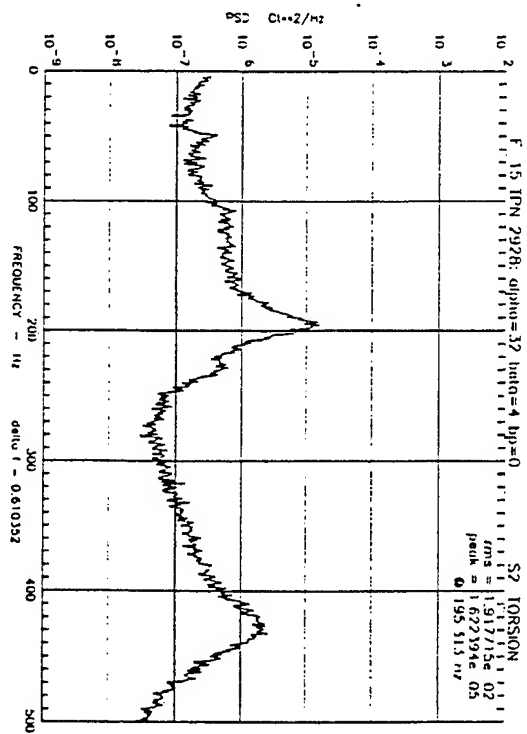
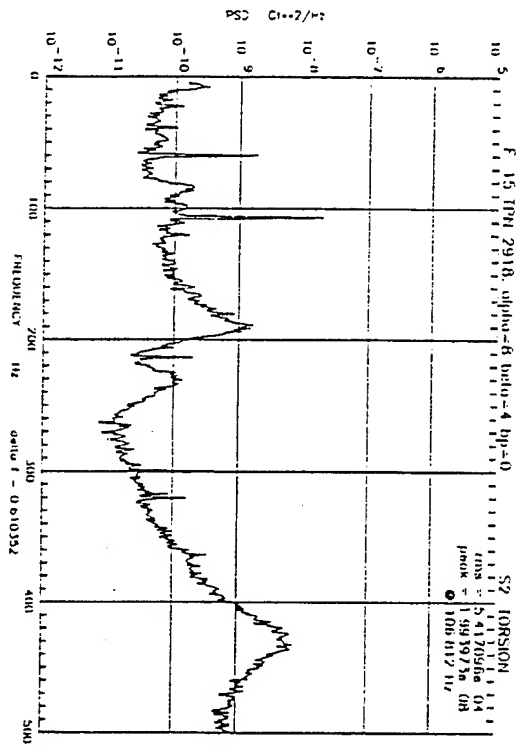
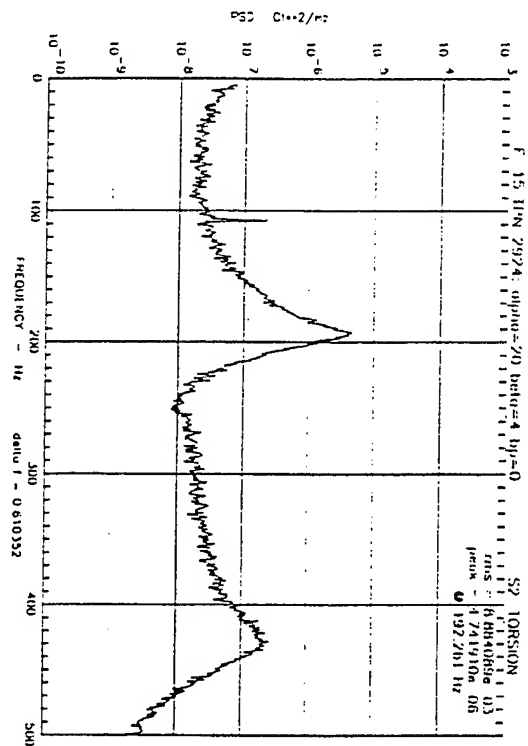
**FLEXIBLE TAIL RESPONSE  
NON DIMENSIONAL BENDING AND TORSION  
PSD GRAPHS**

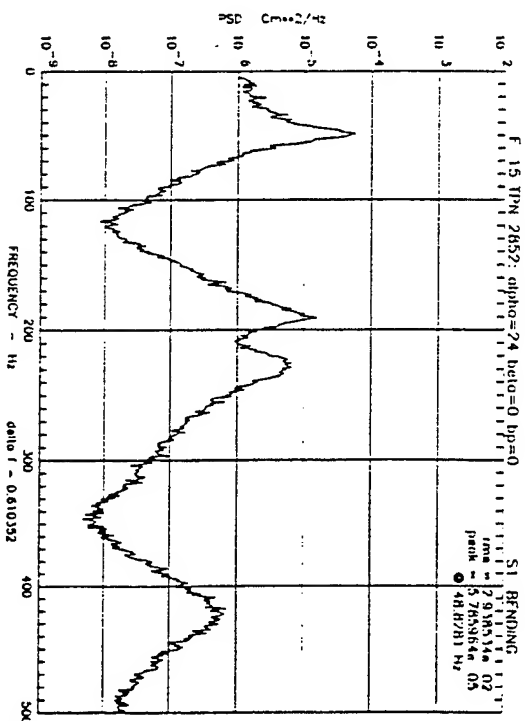
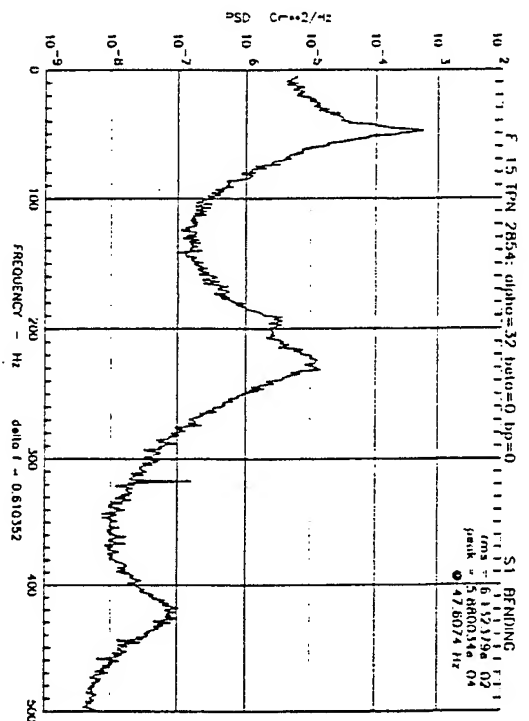
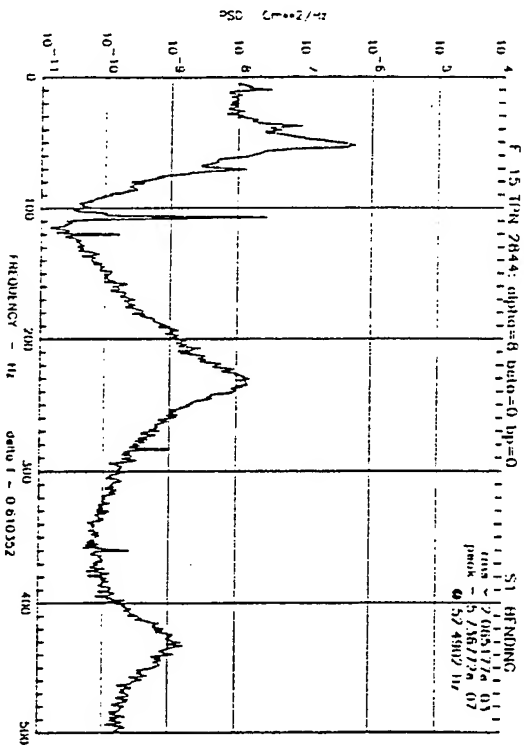
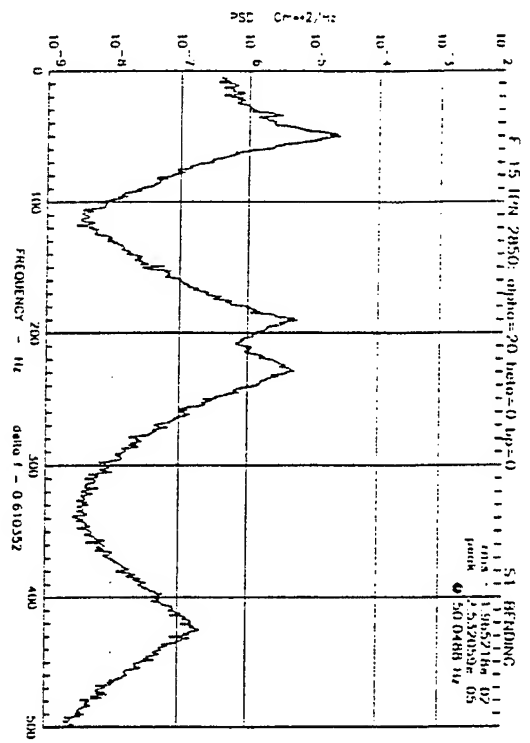
**Q= 56PSF**

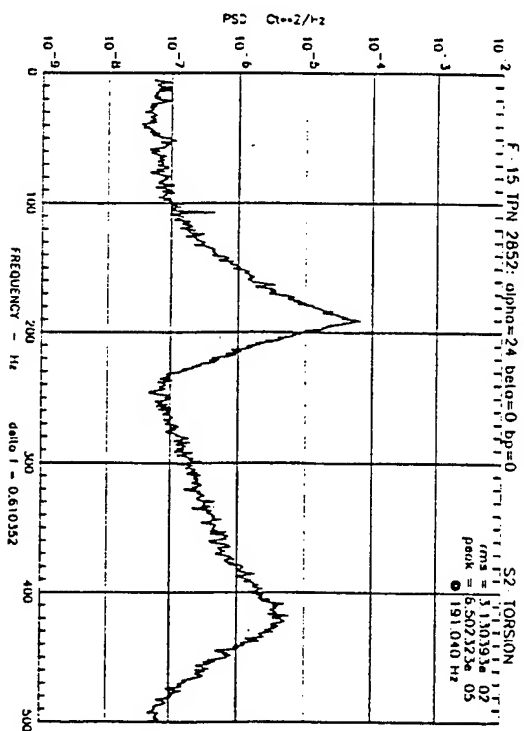
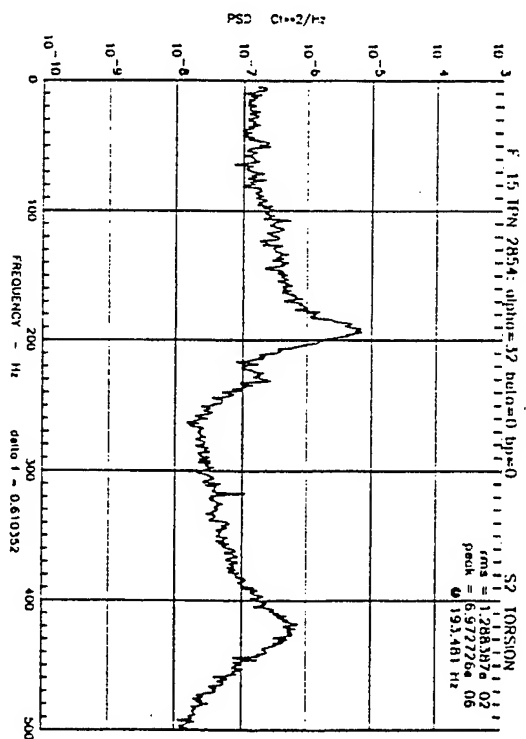
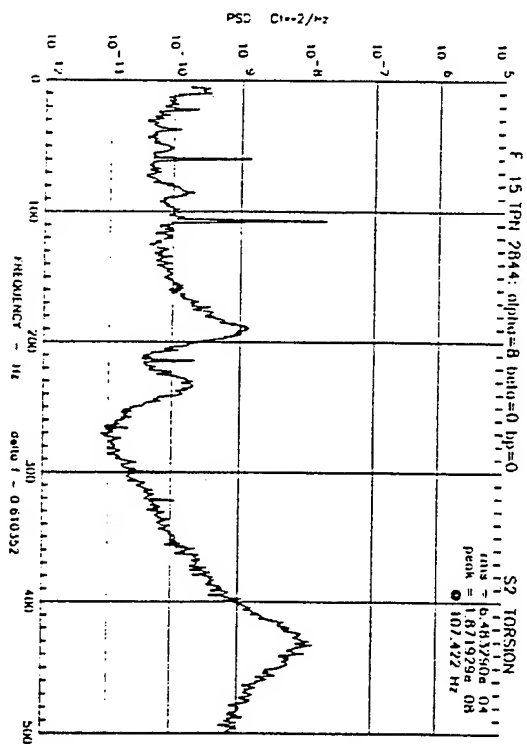
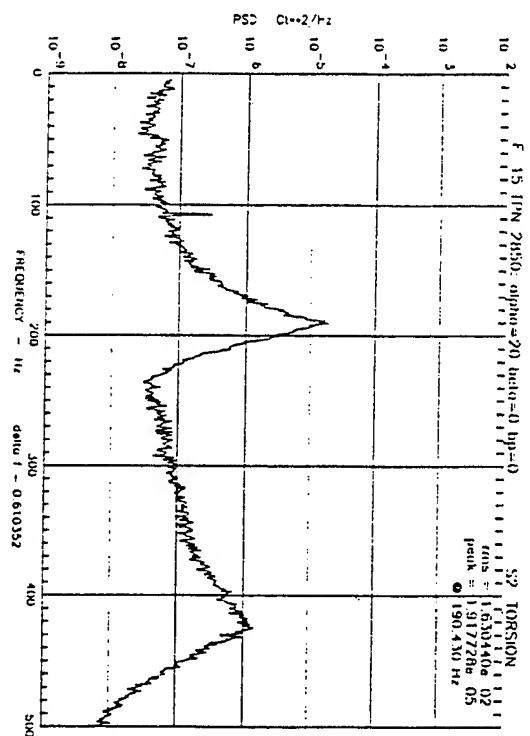
**3.1.1.1 WBP =0, 45, 65 PSI, BETA = 0, +4, -4 DEG, ALPHA= 8....32 DEG**

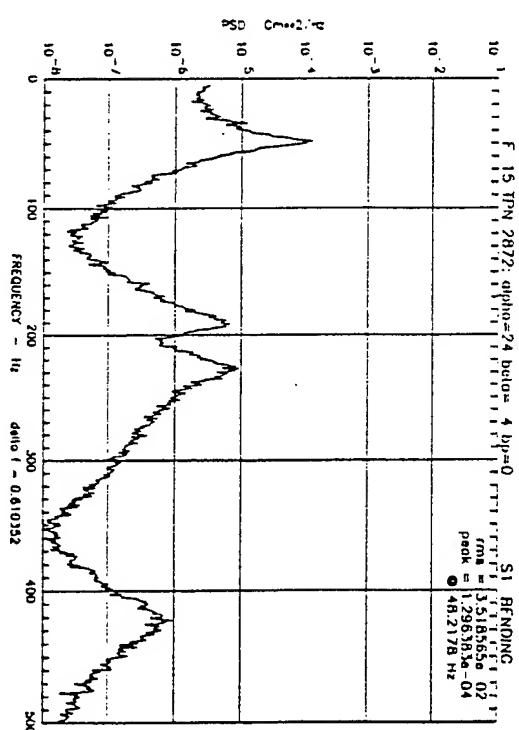
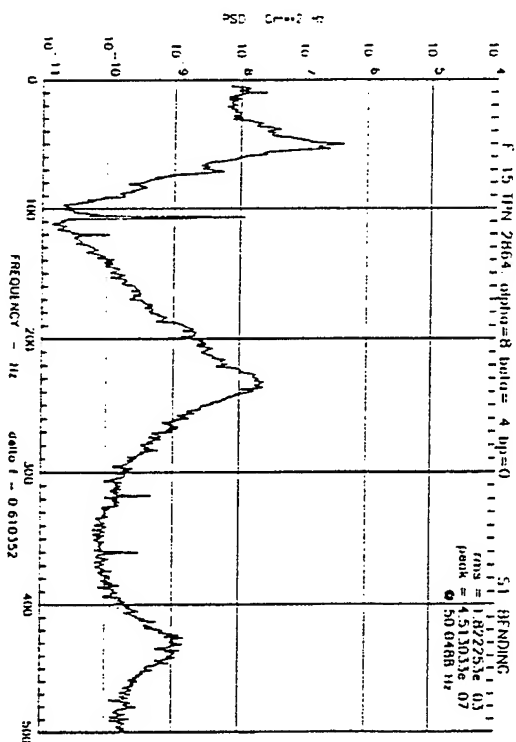
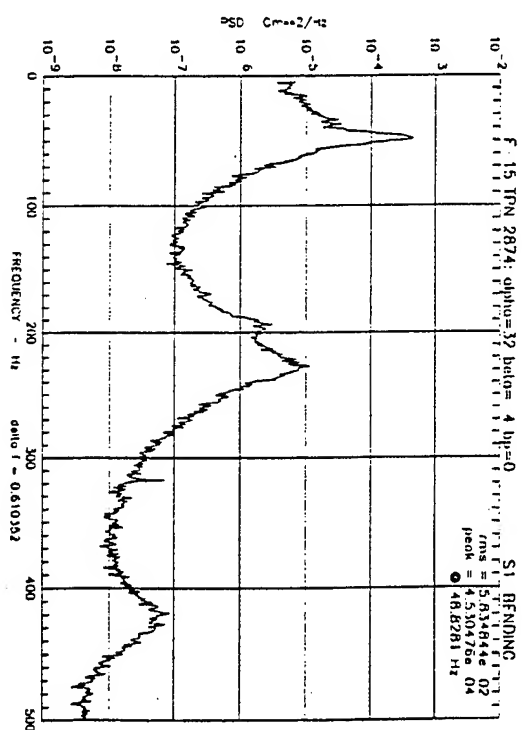
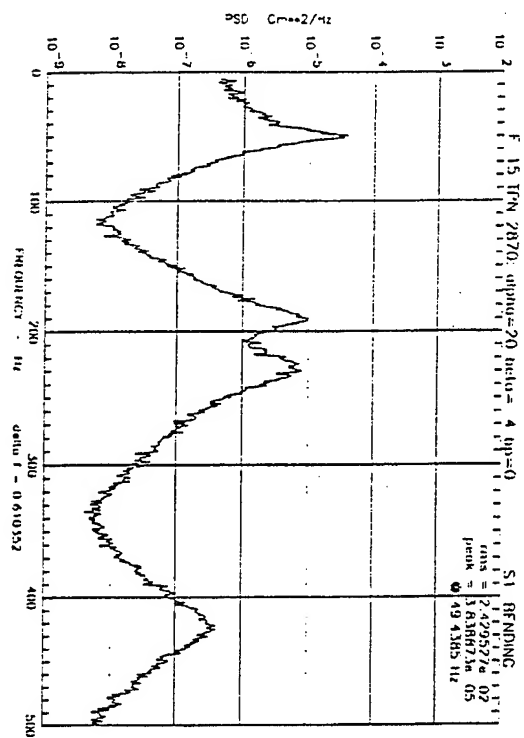


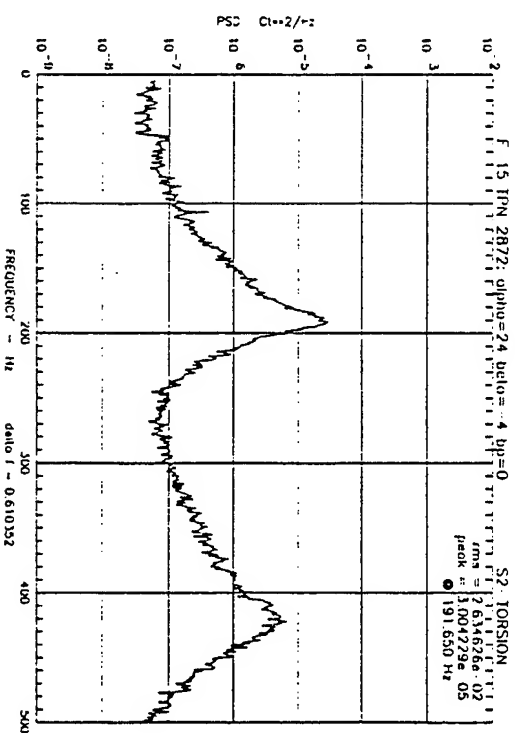
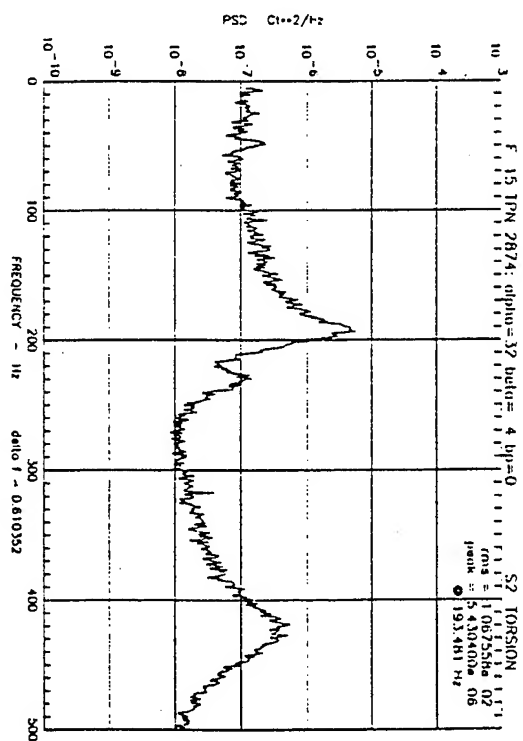
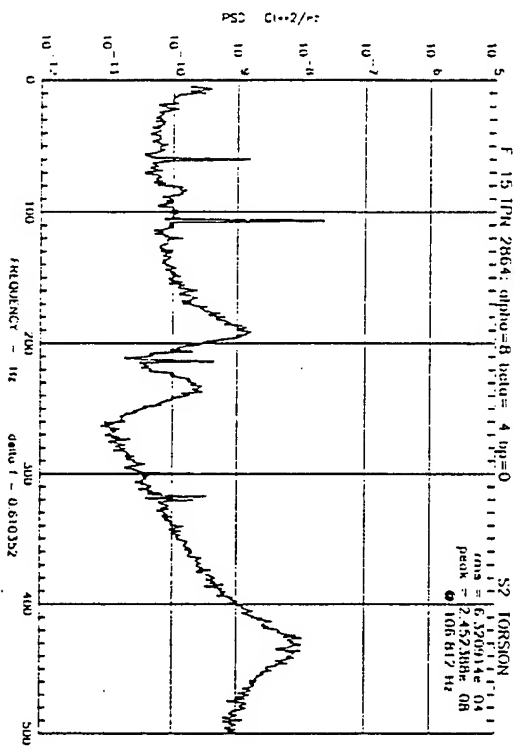
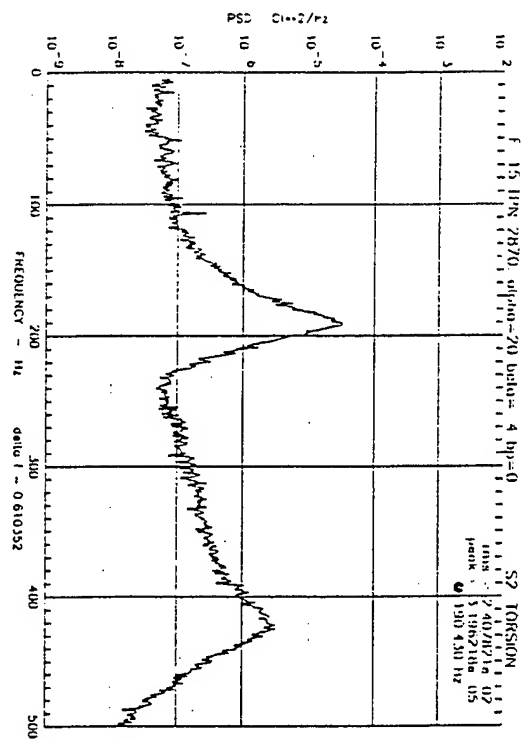


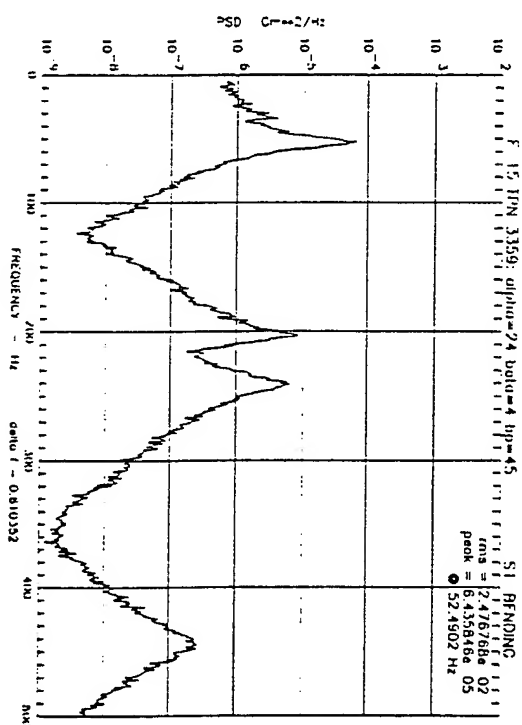
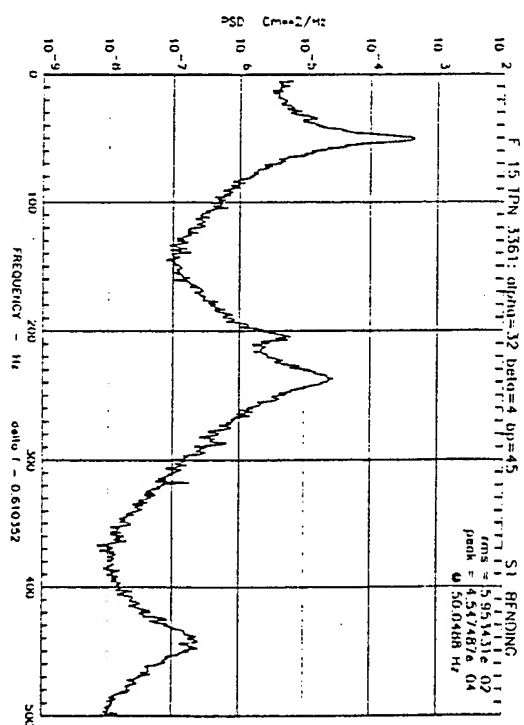
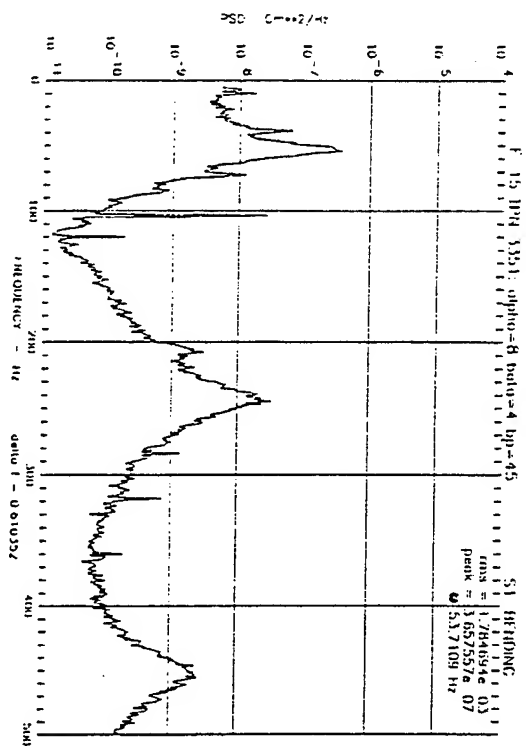
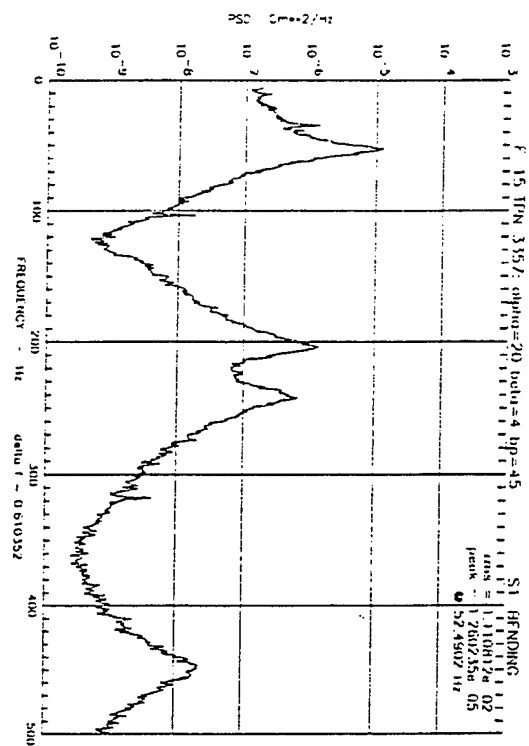


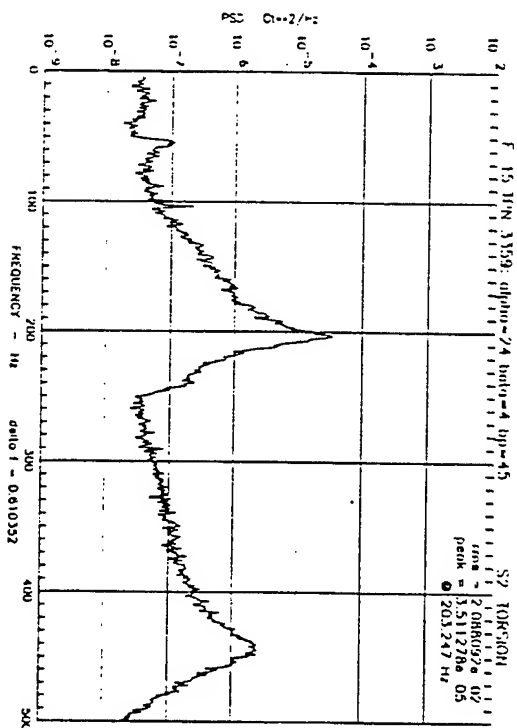
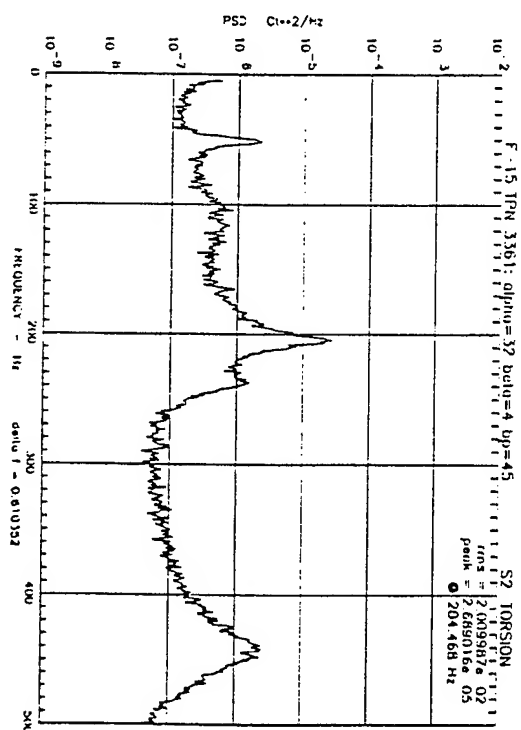
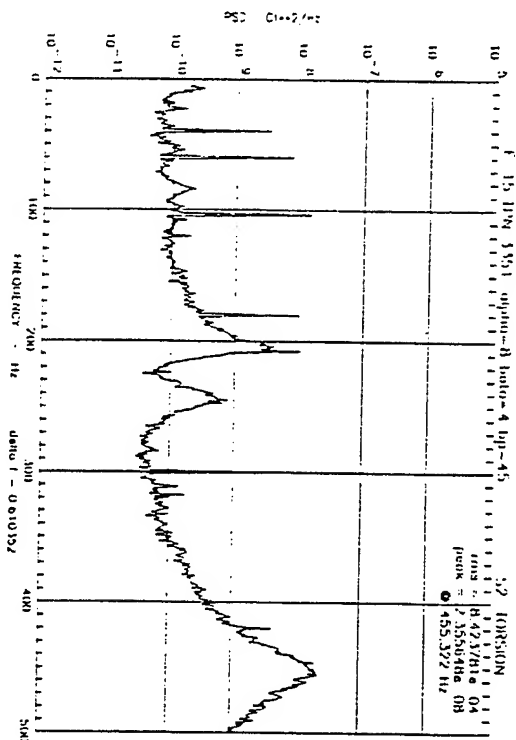
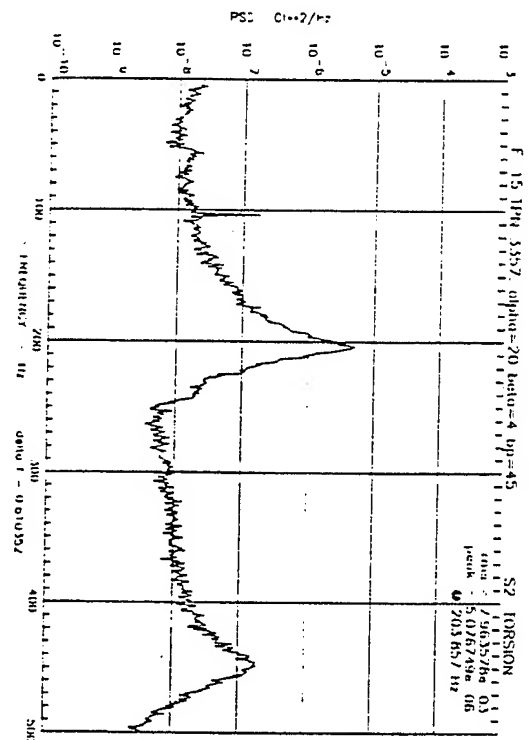


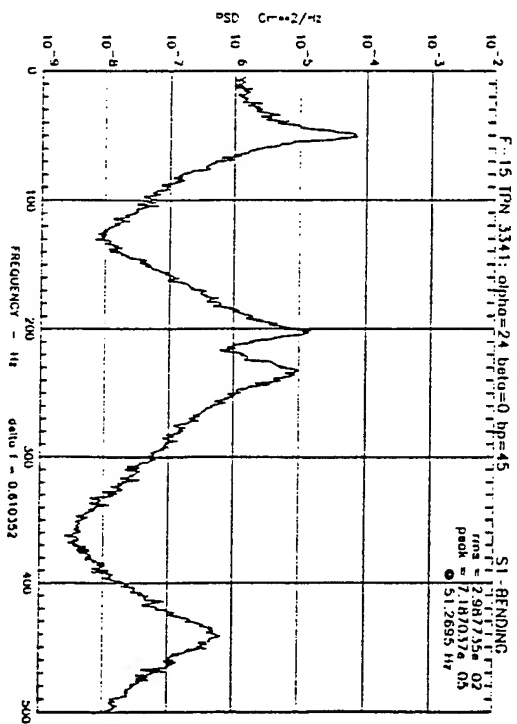
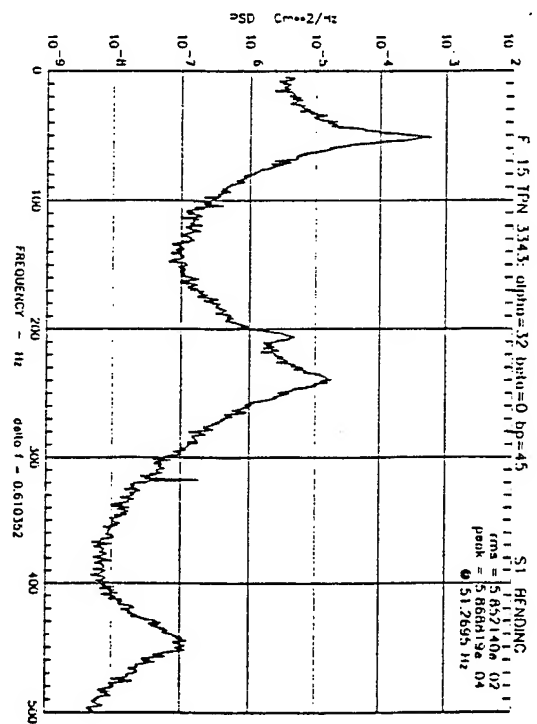
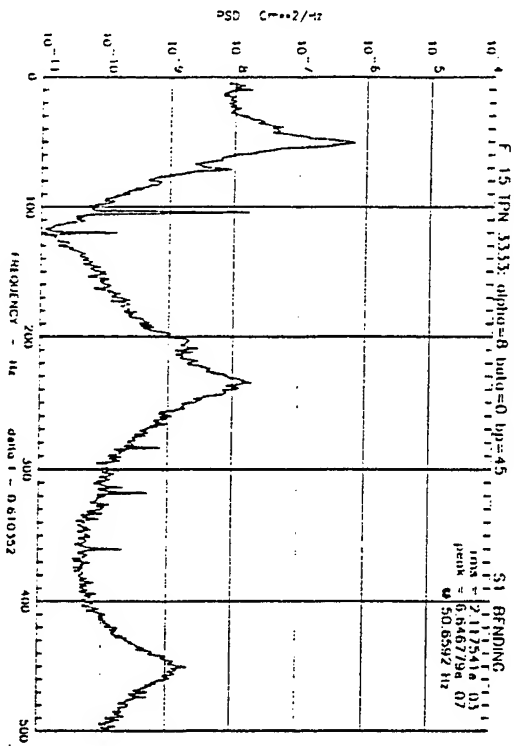
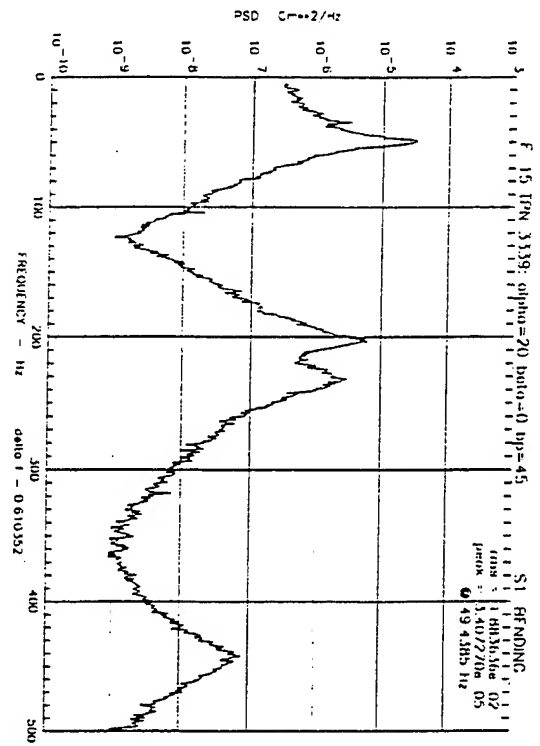




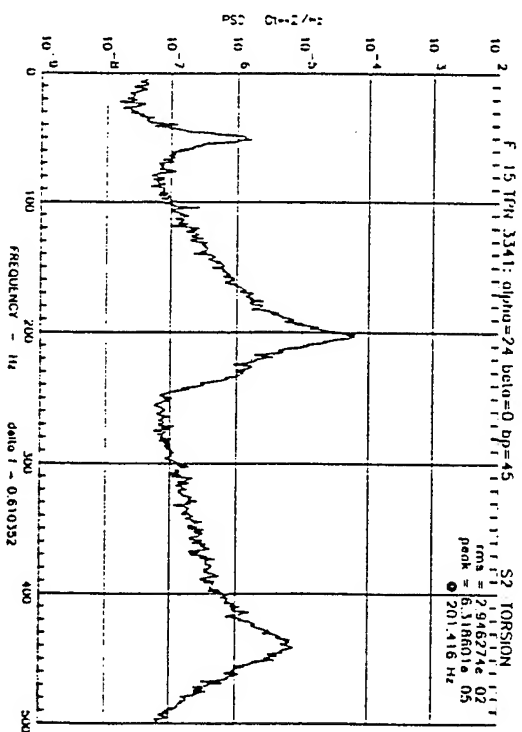
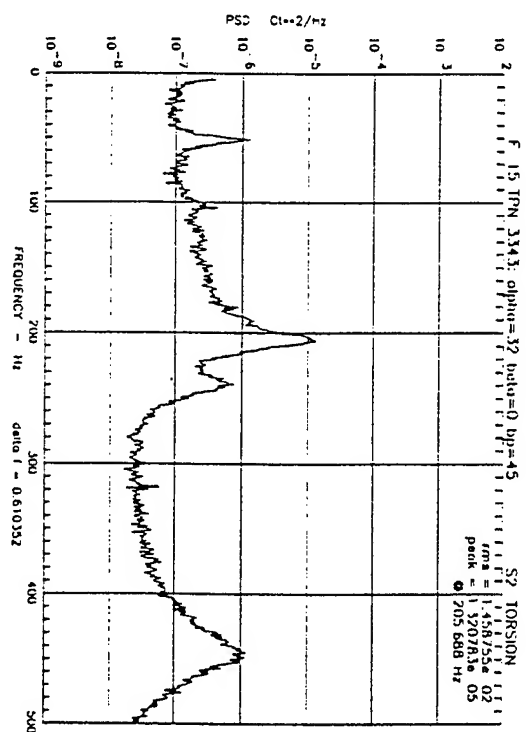
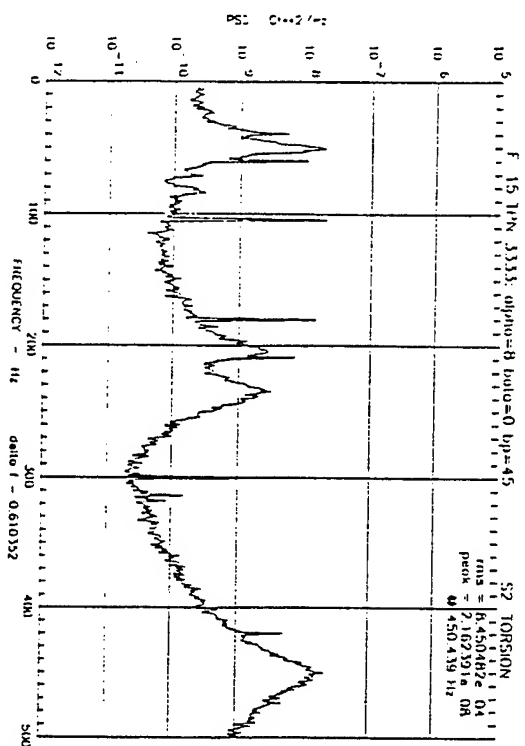
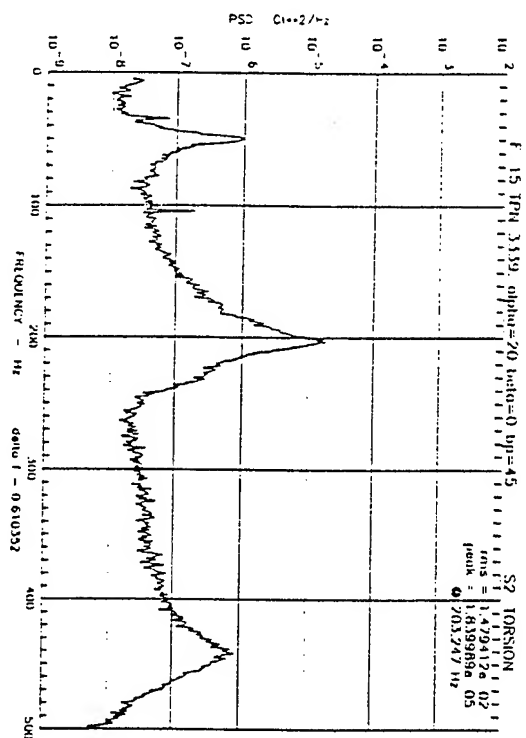


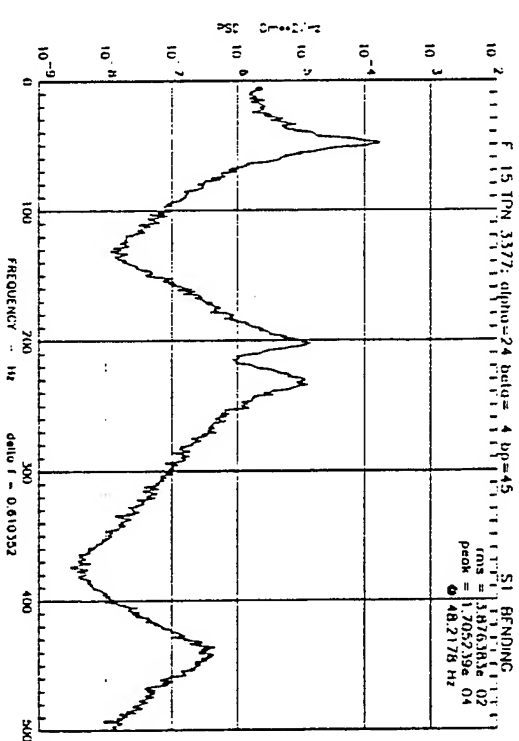
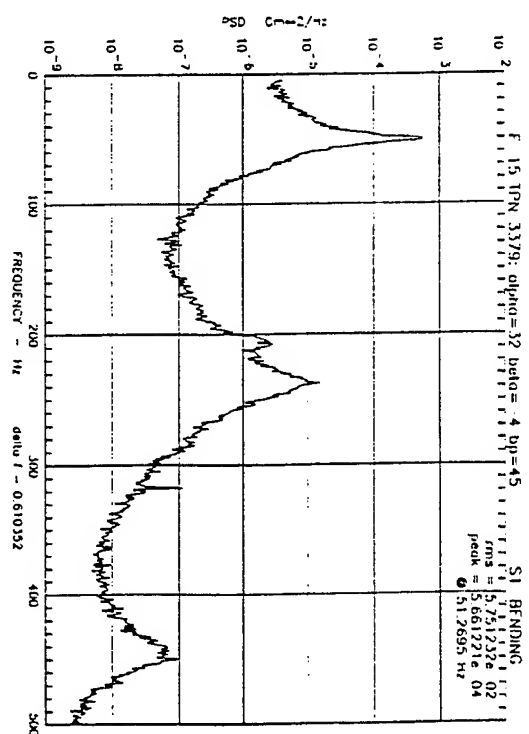
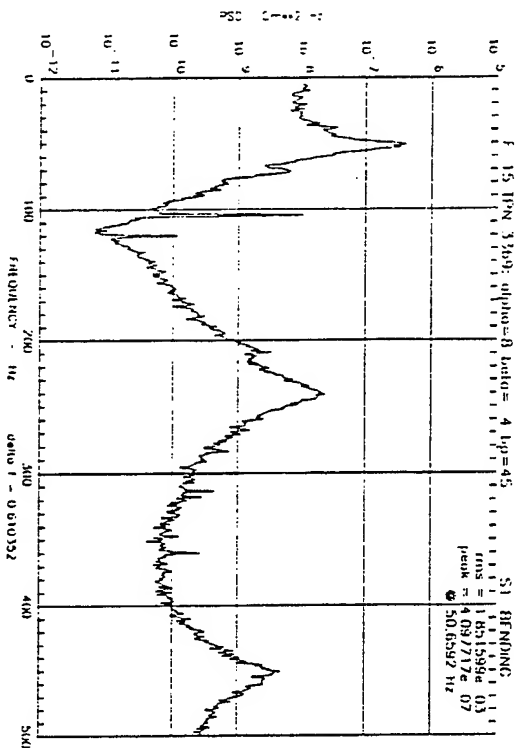
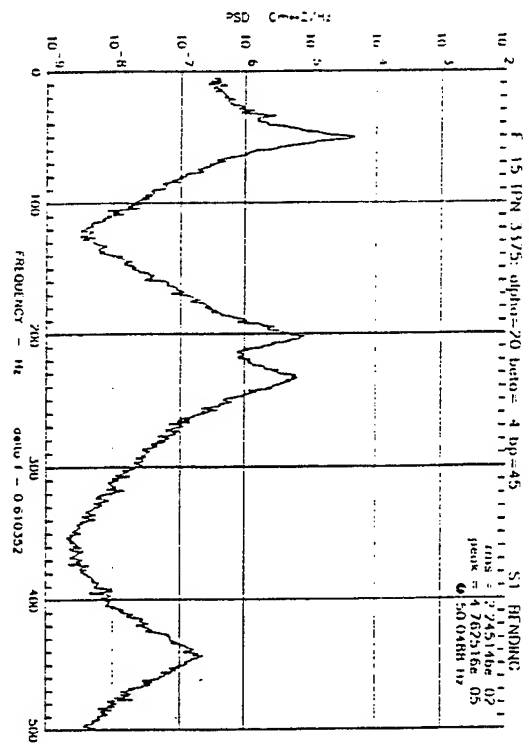


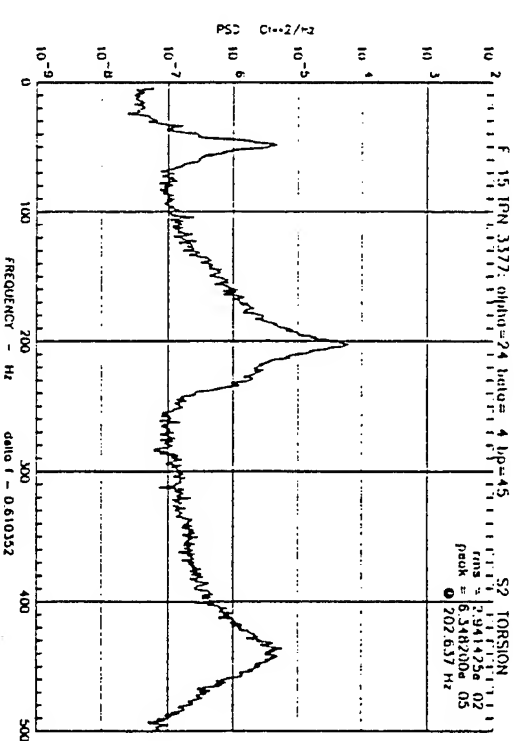
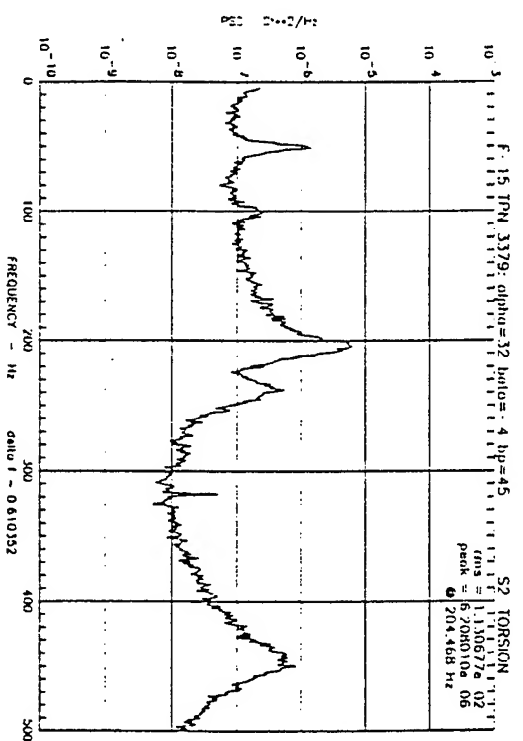
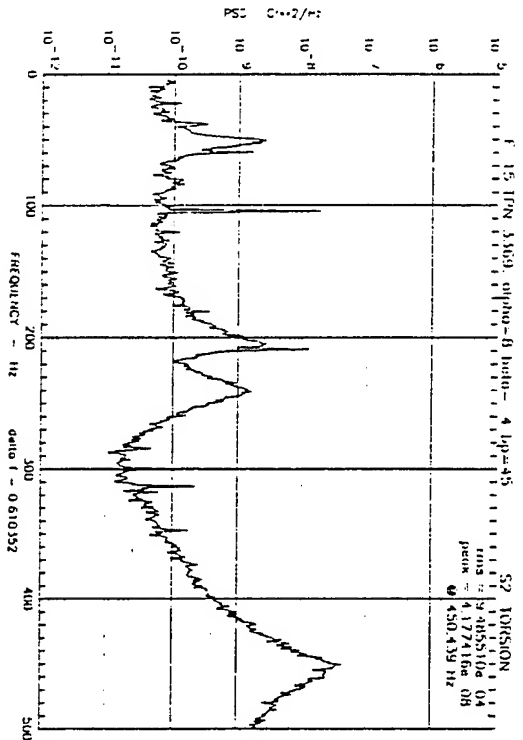
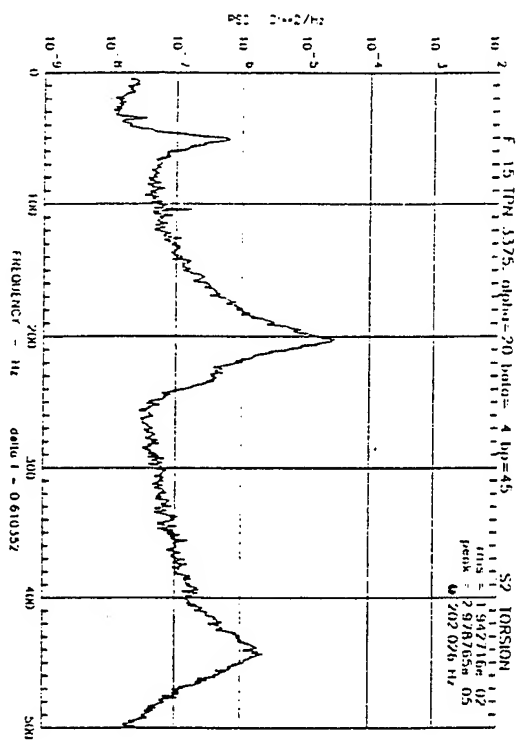


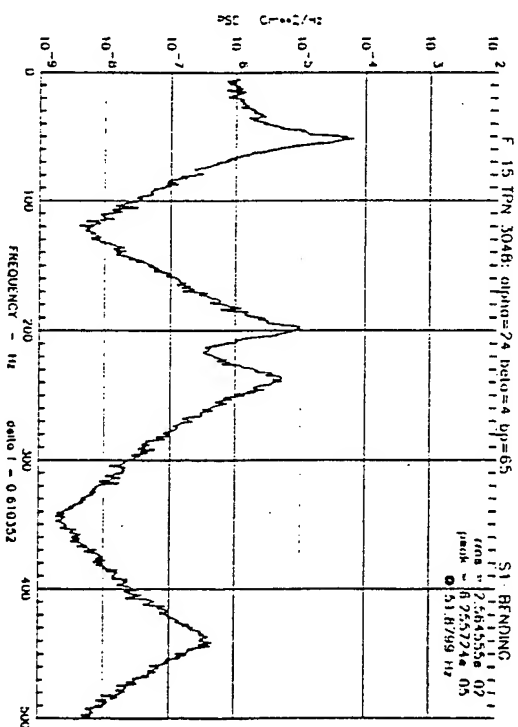
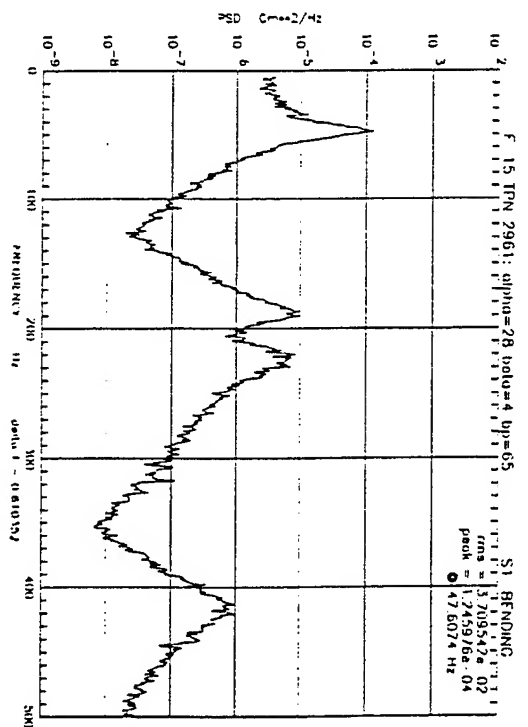
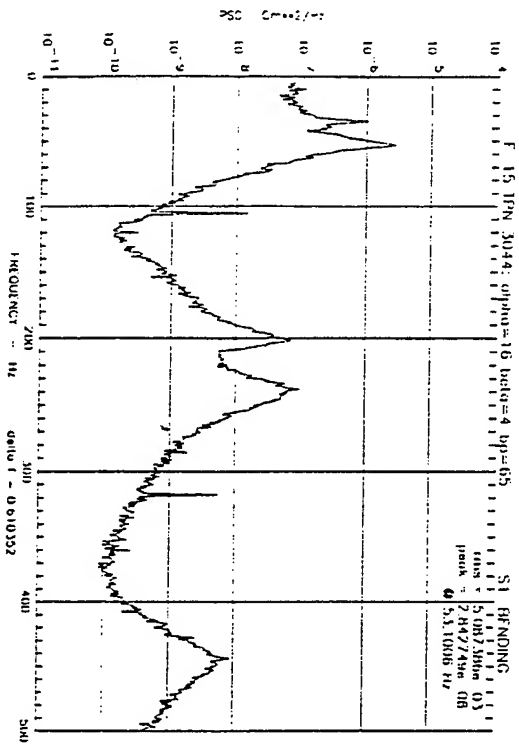
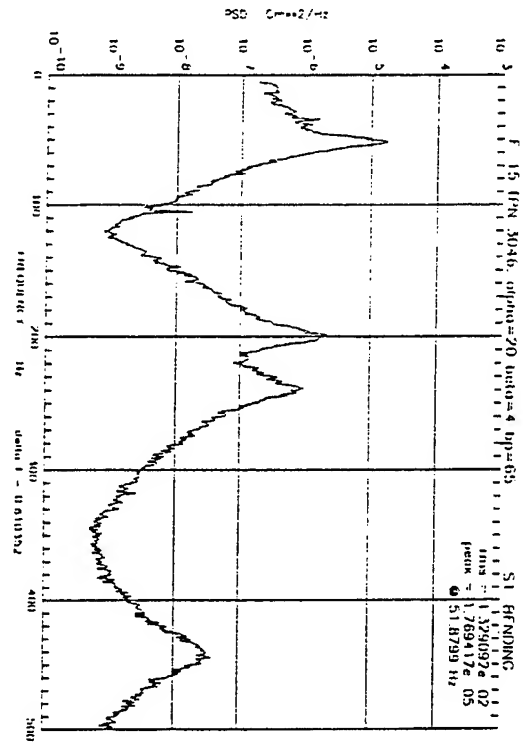


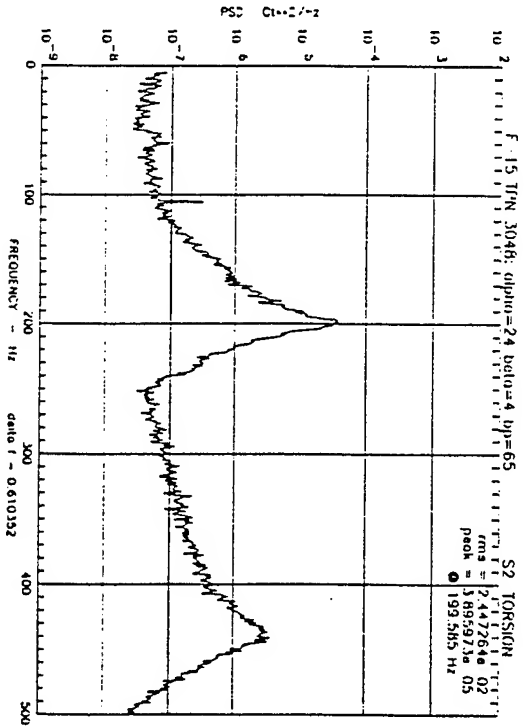
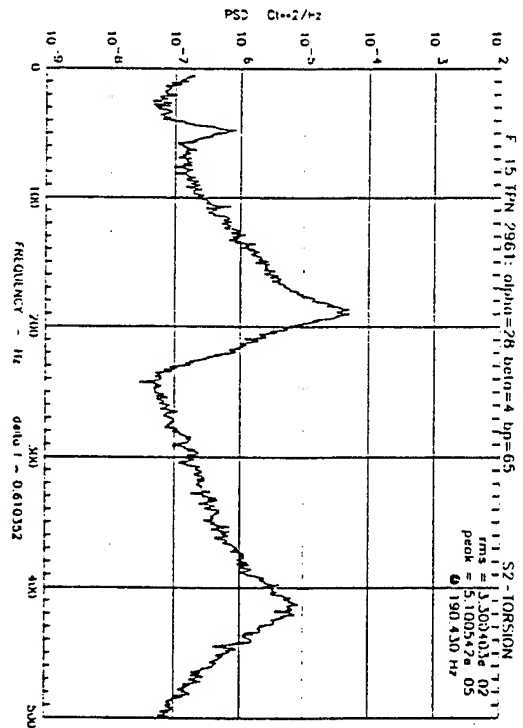
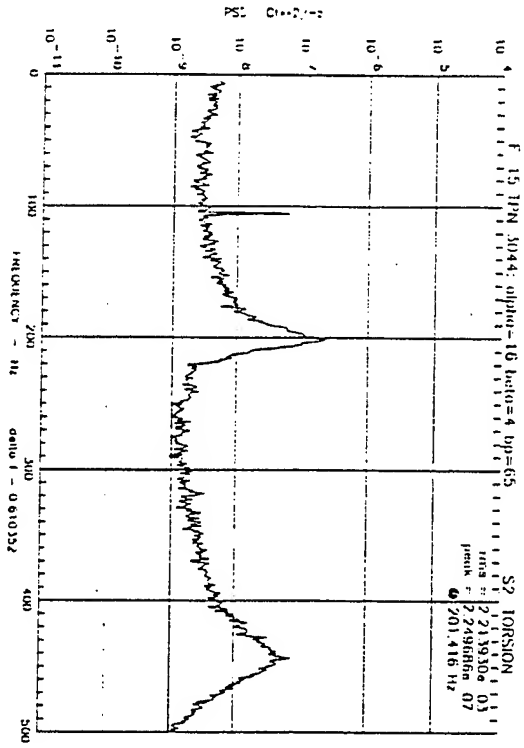
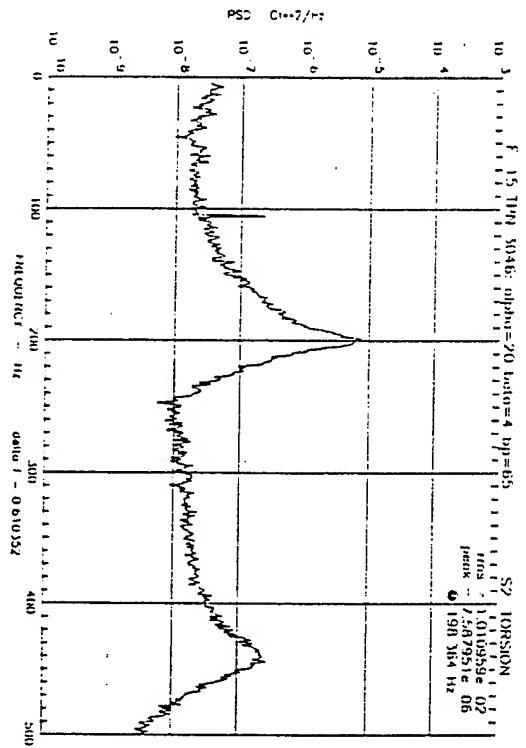


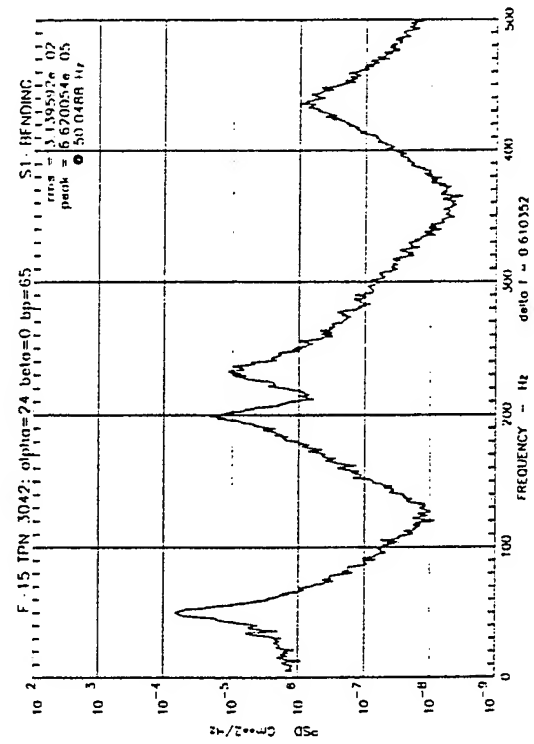
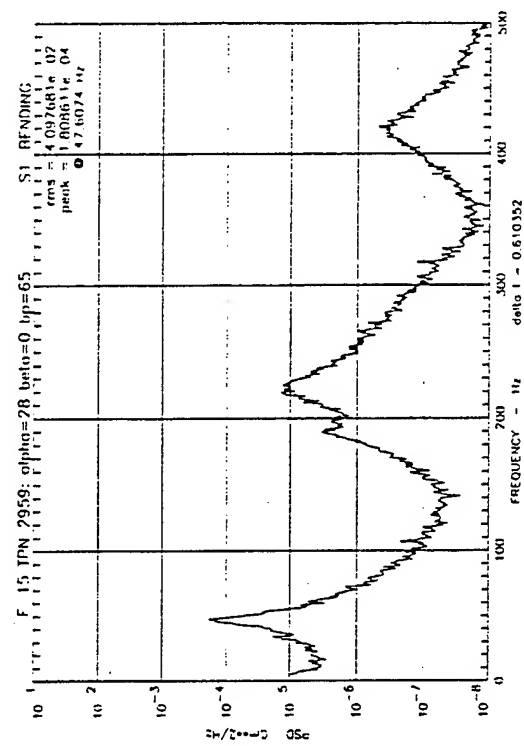
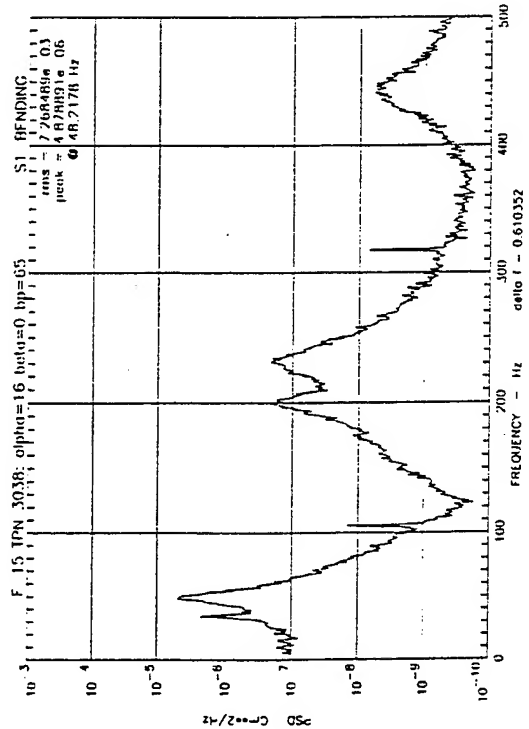
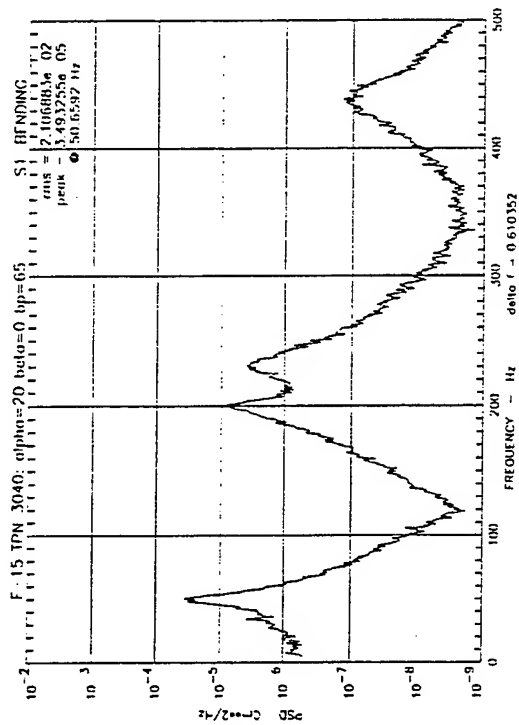


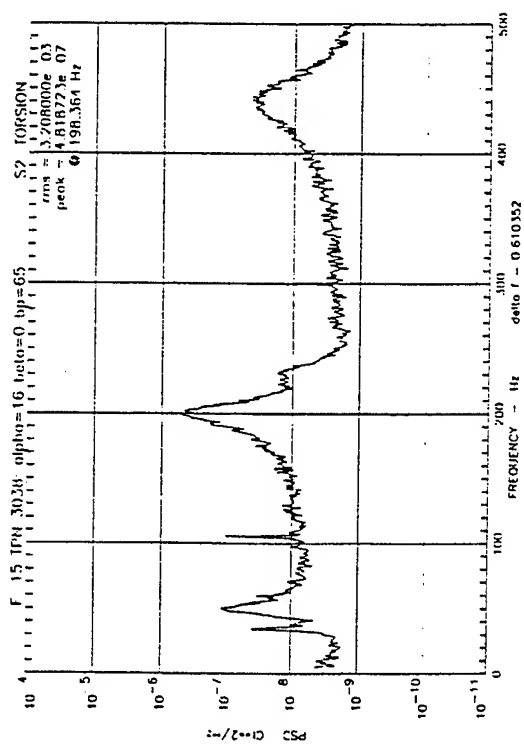
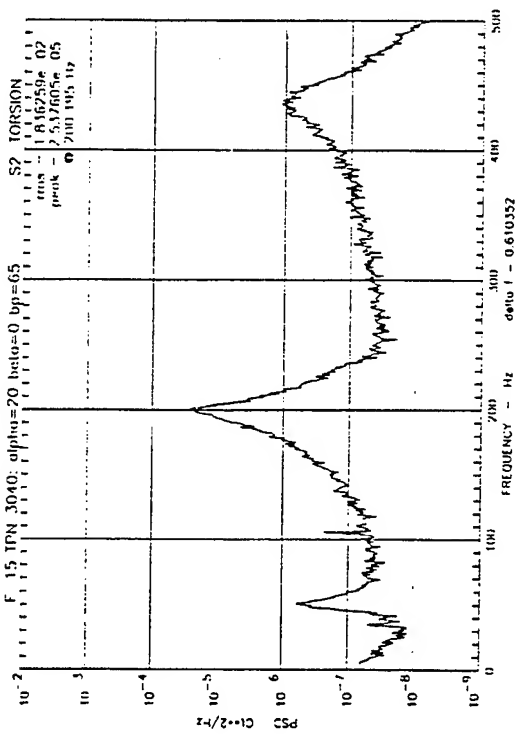
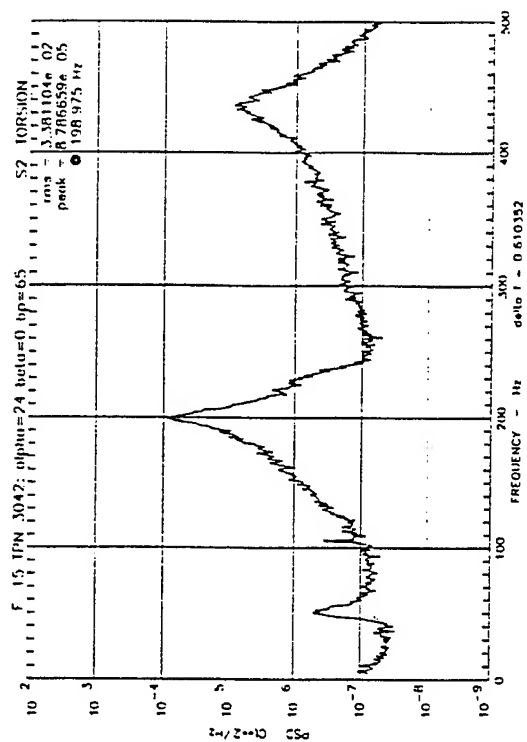
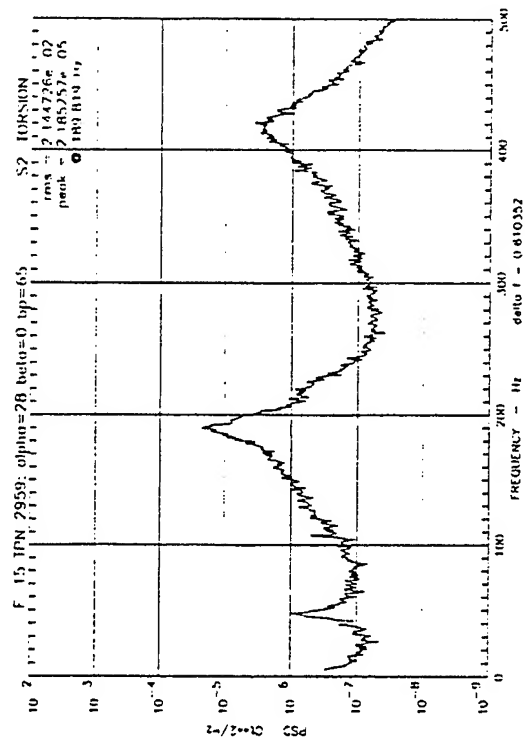


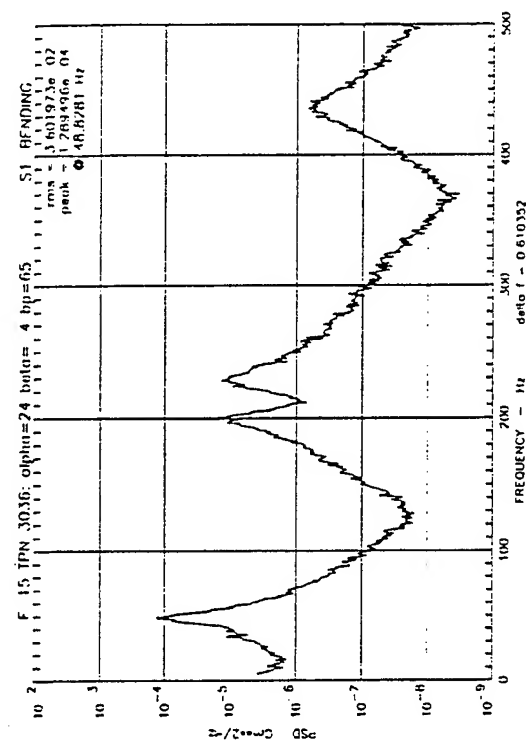
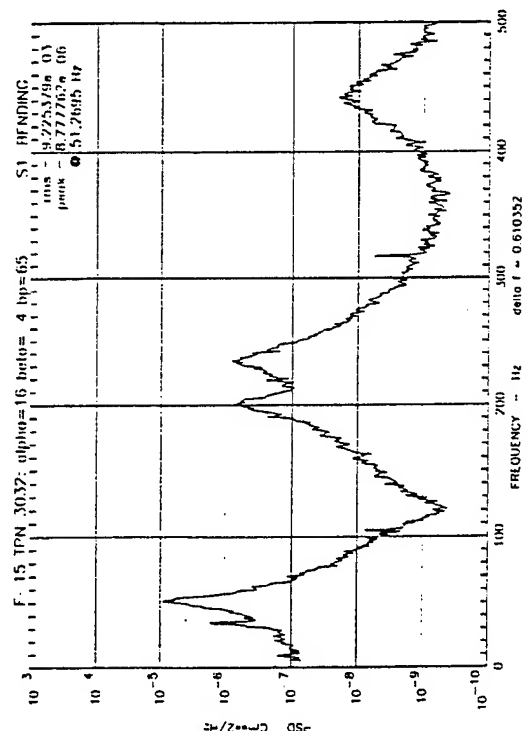
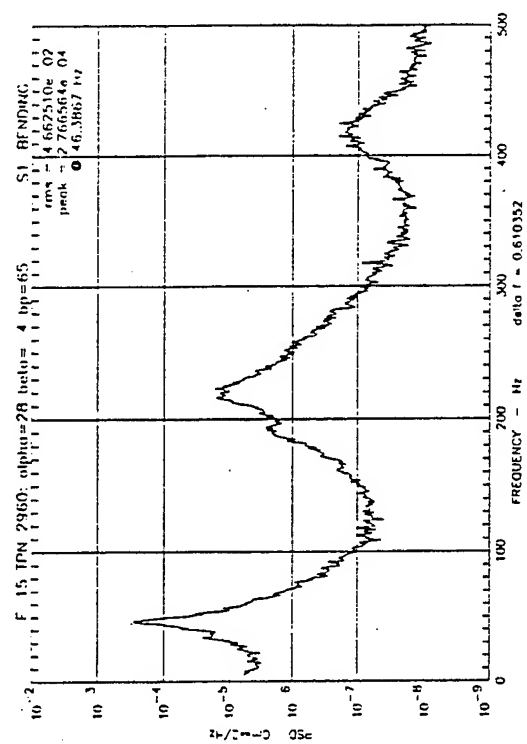
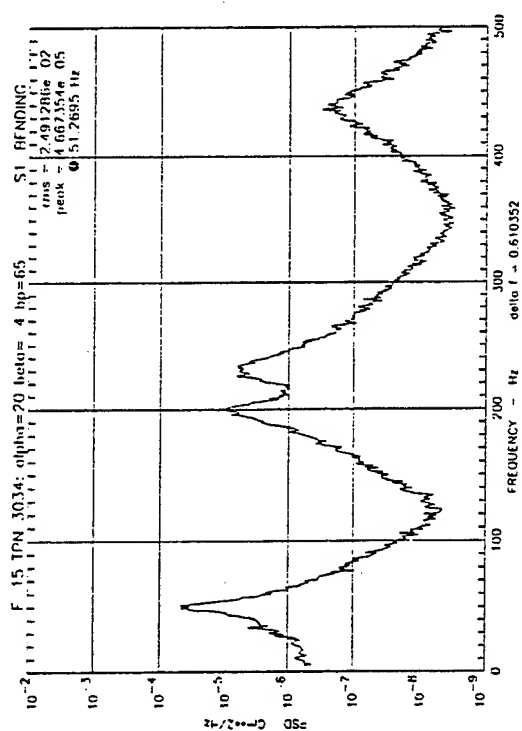




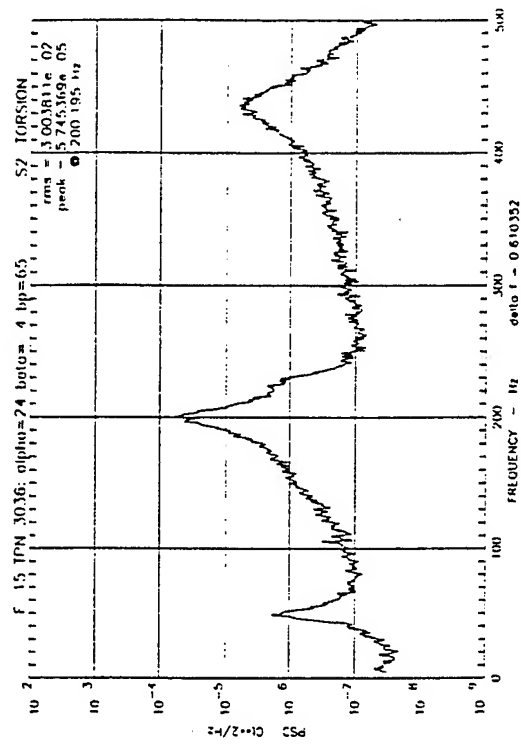
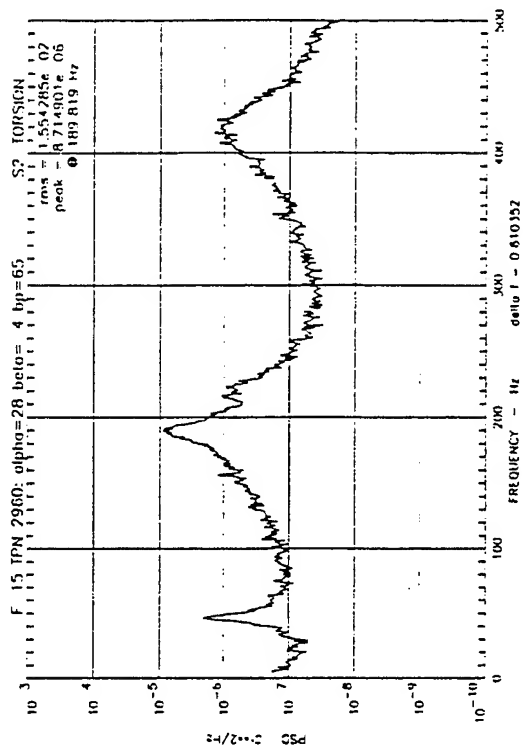
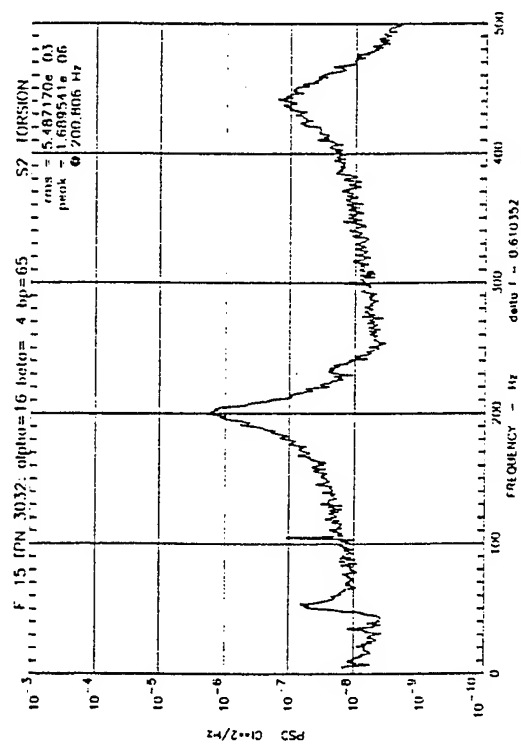
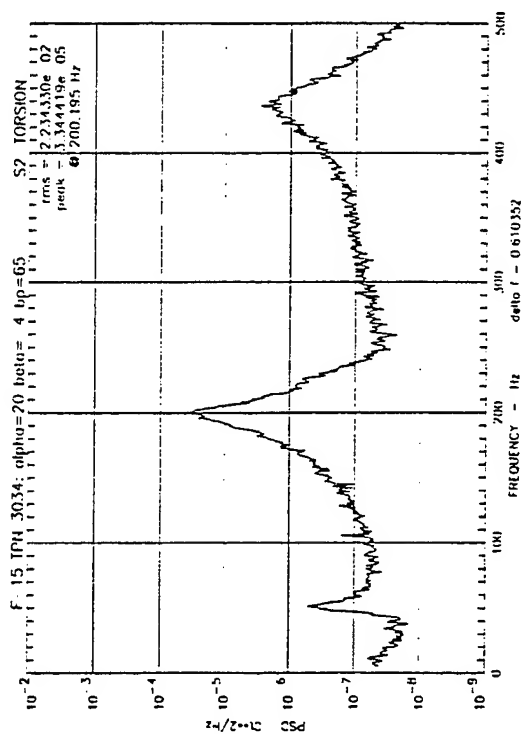


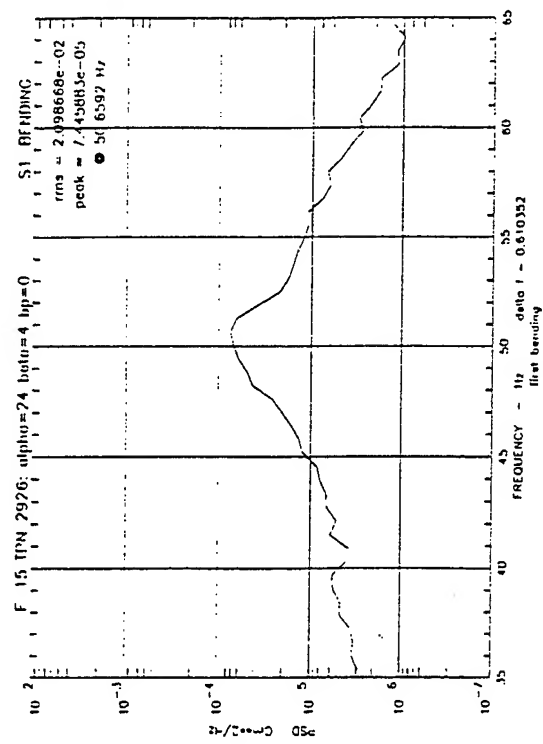
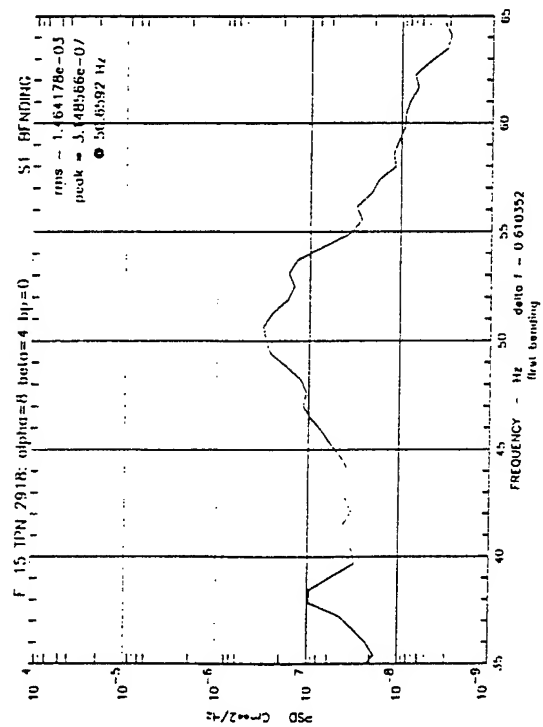
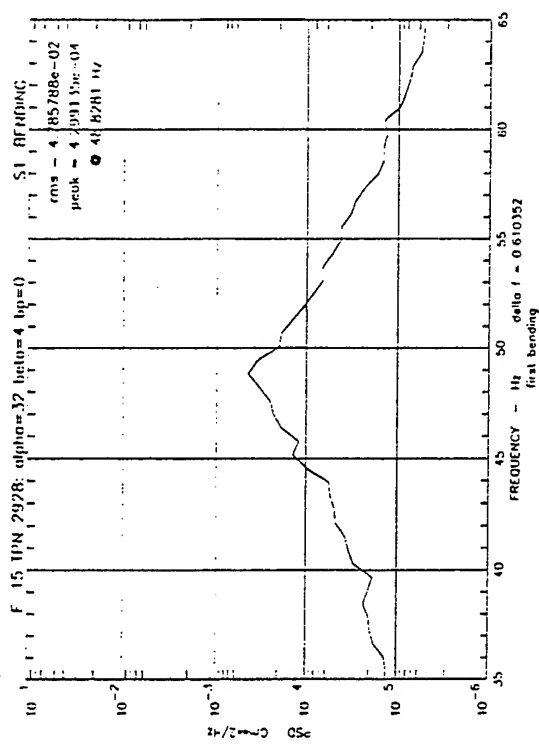
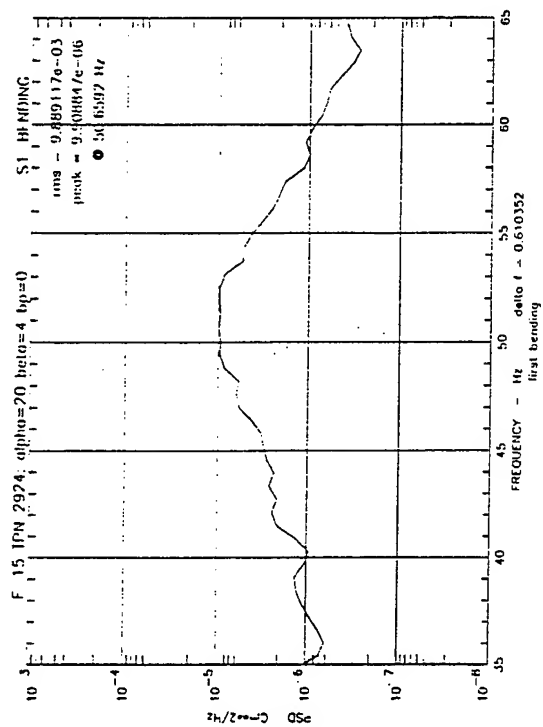


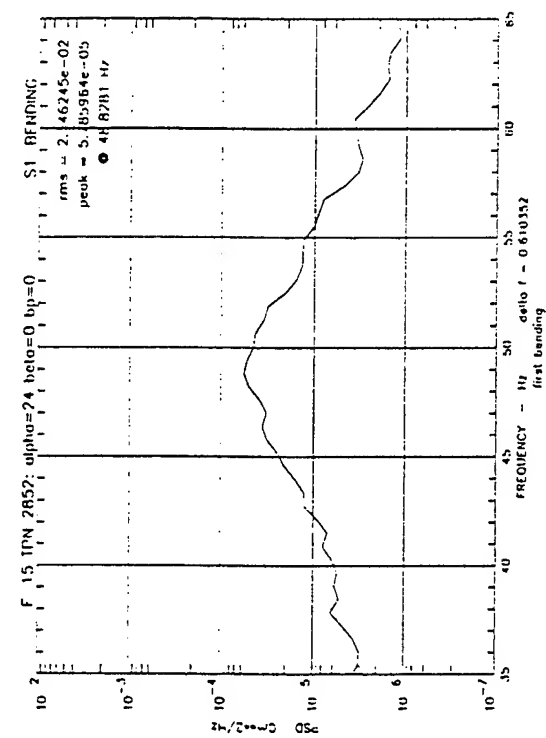
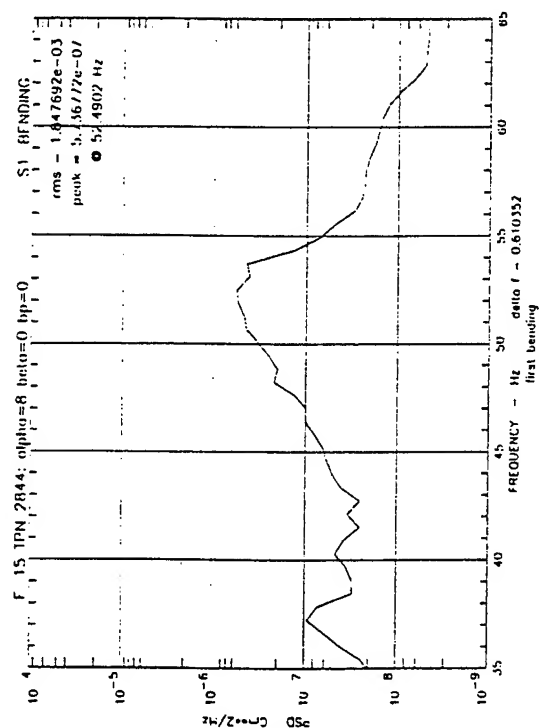
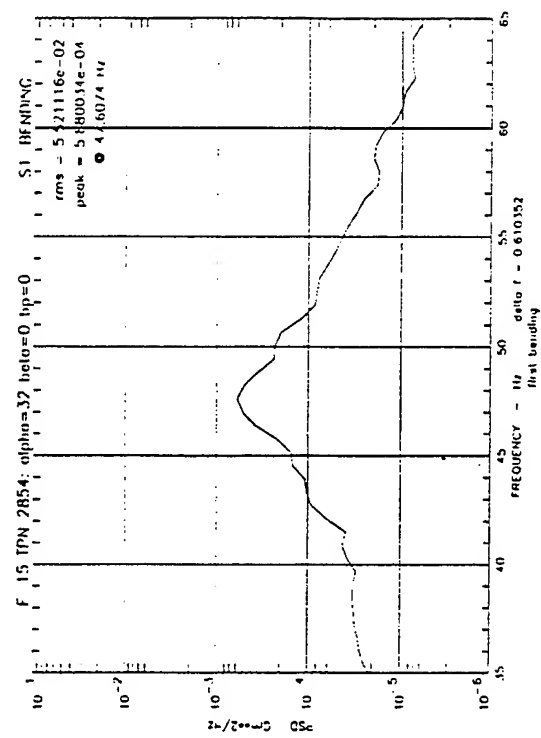
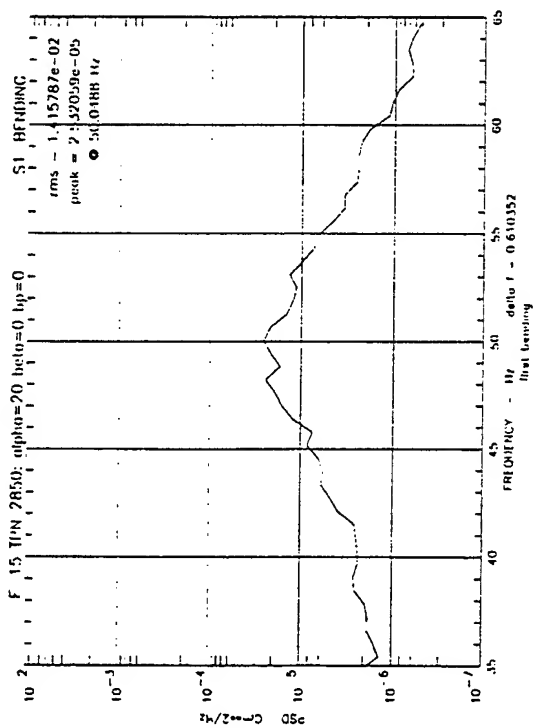


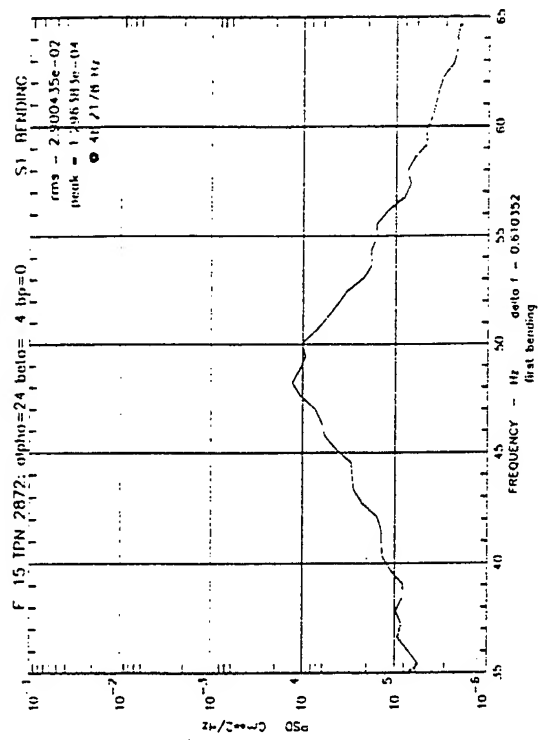
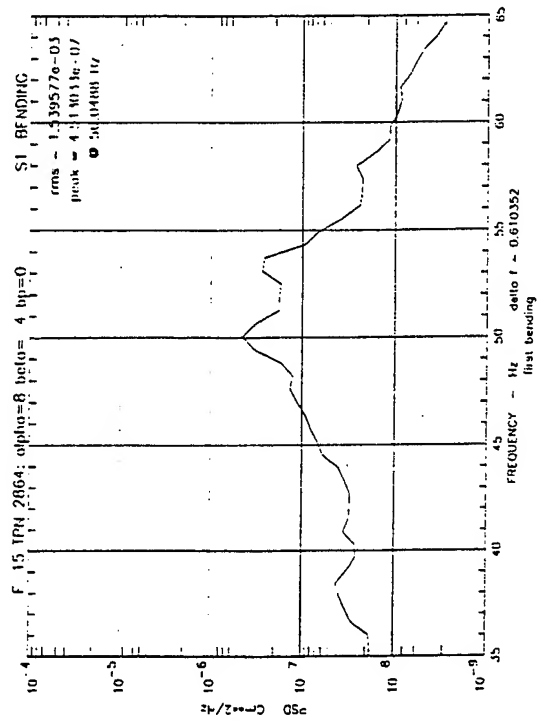
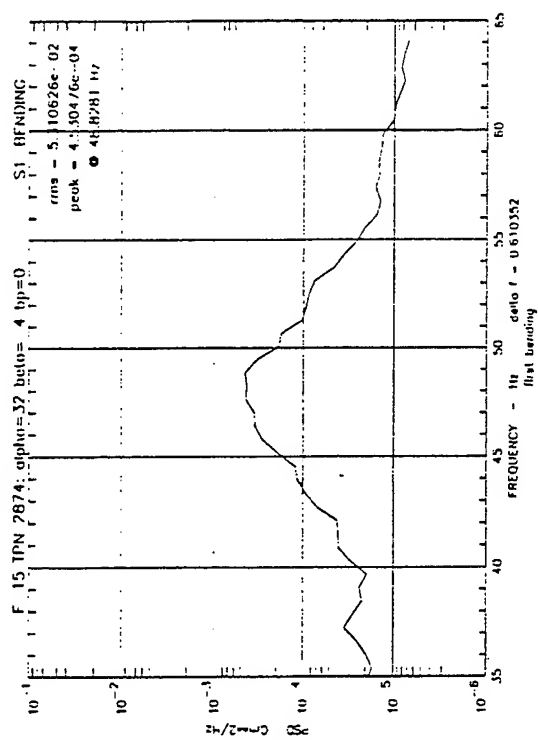
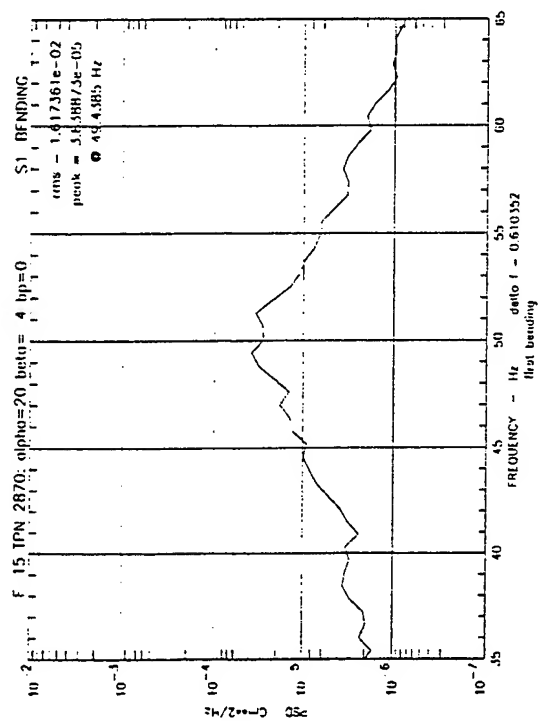


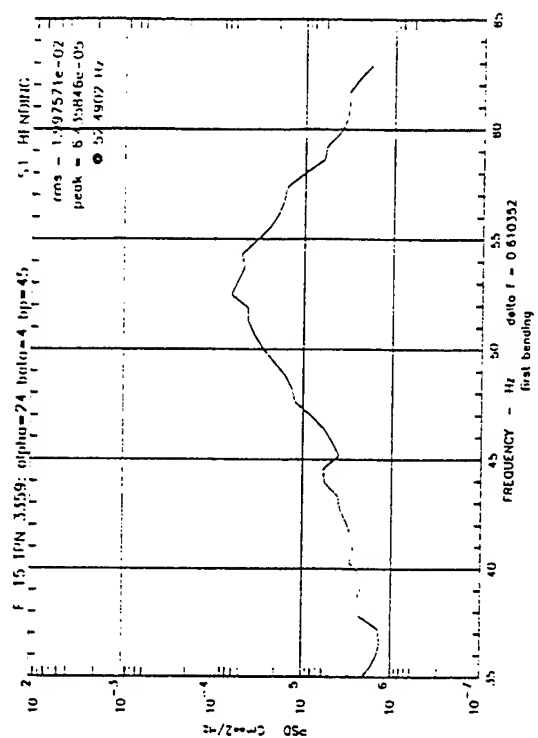
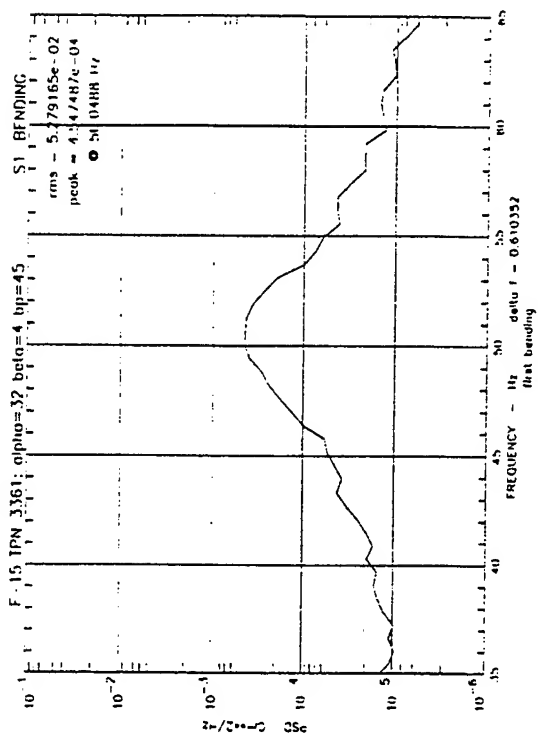
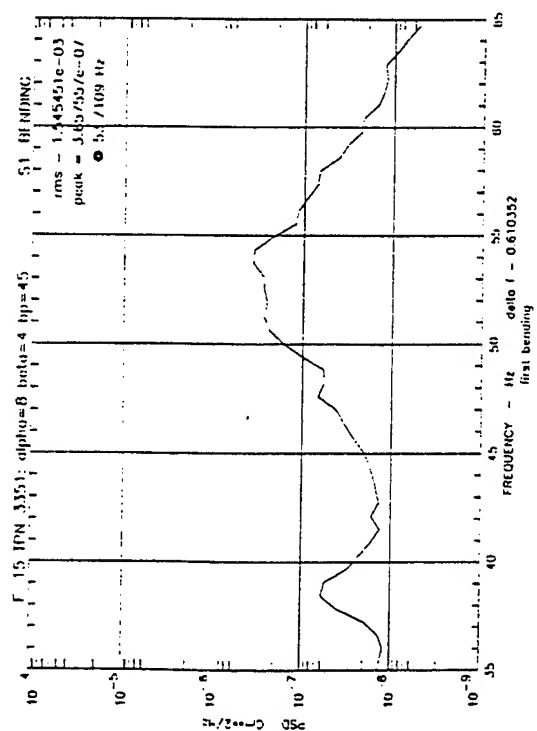
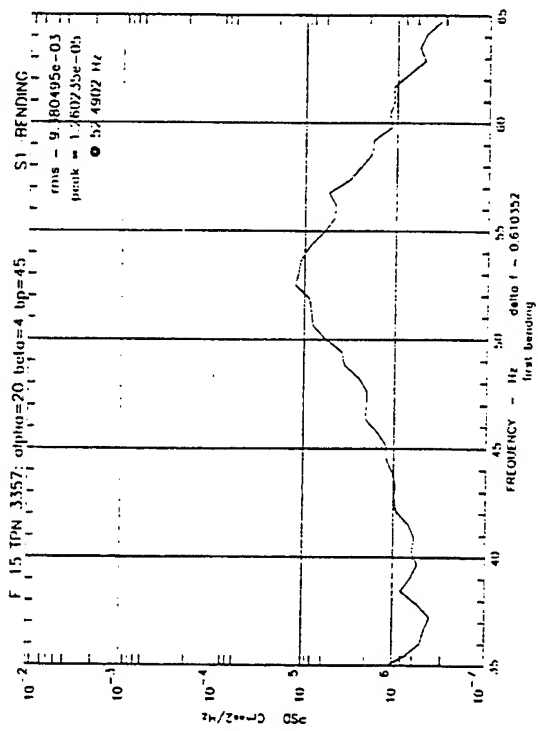


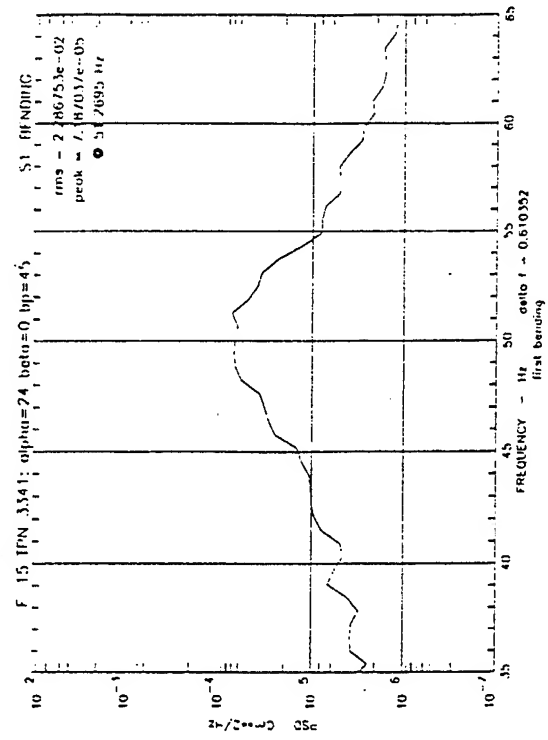
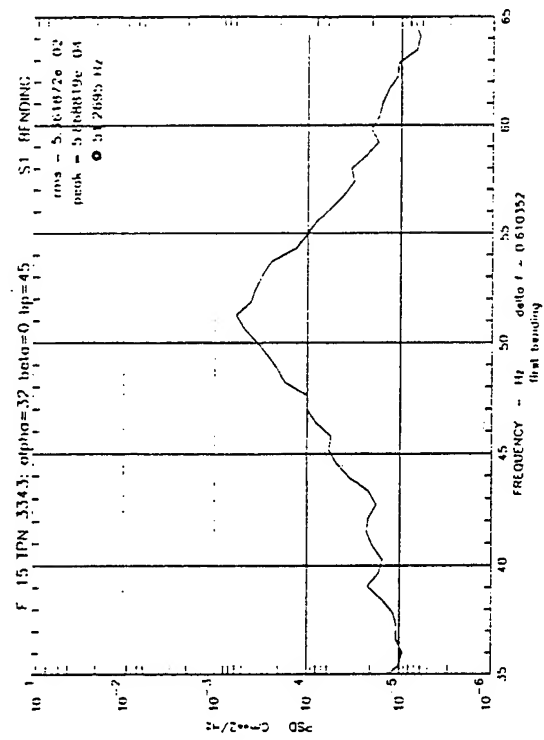
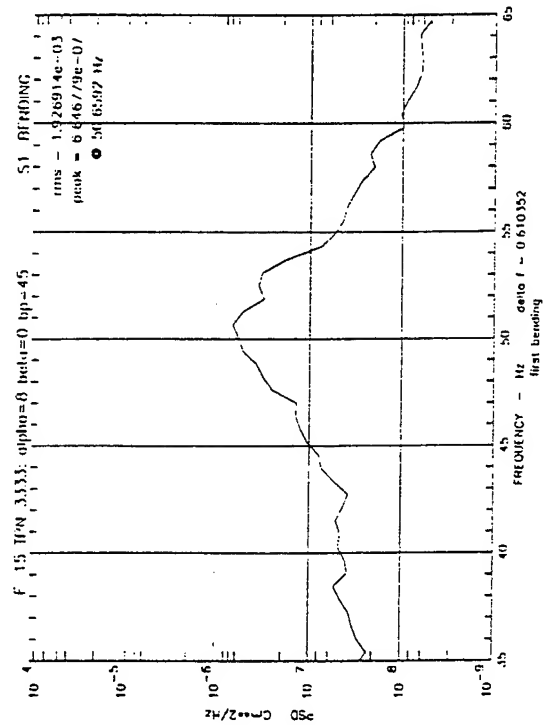
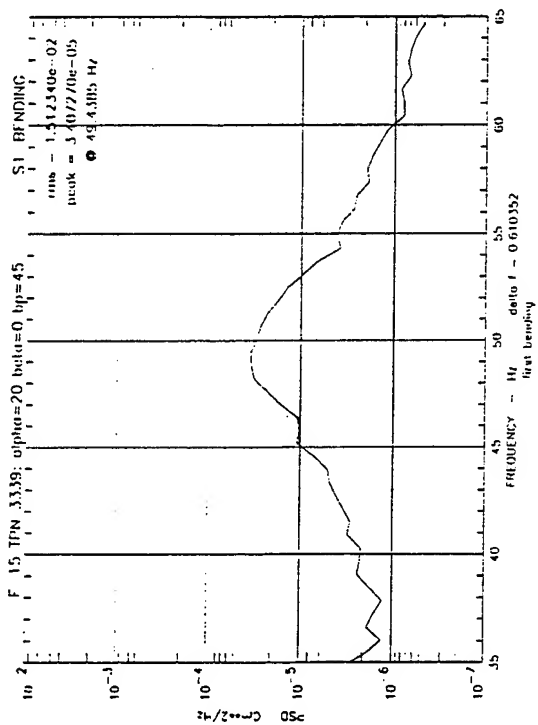


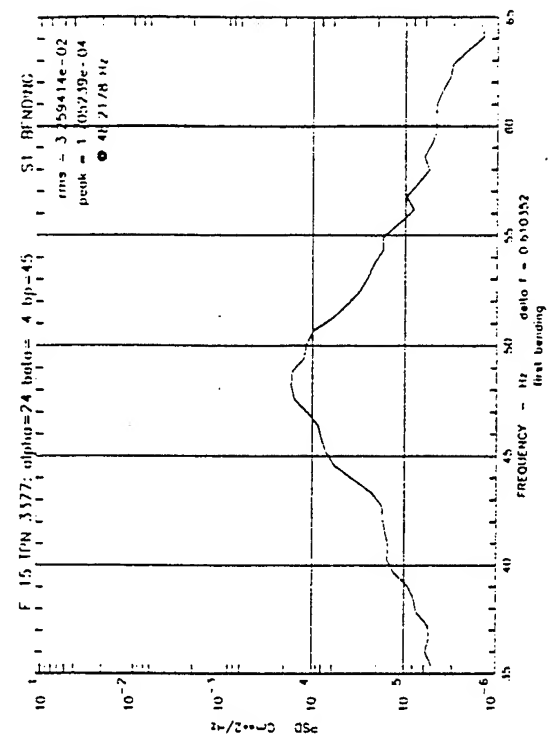
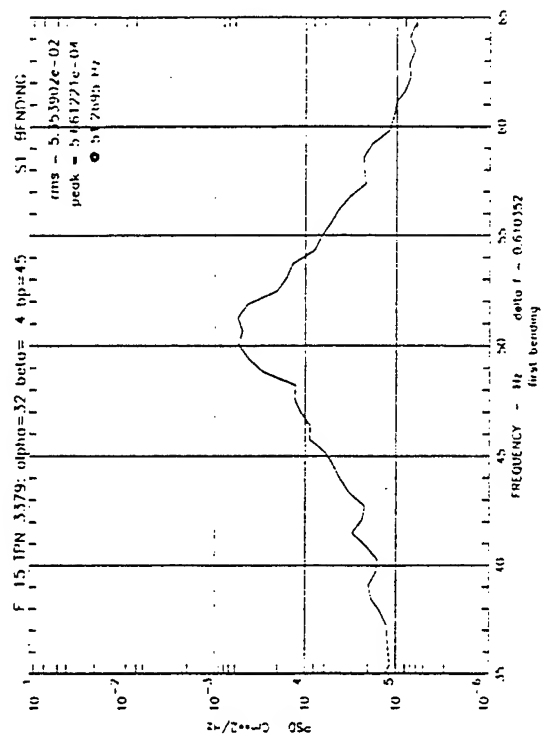
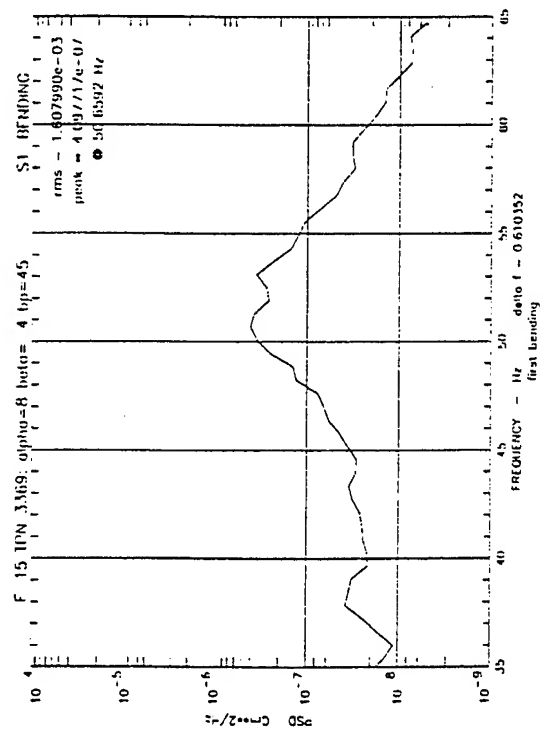
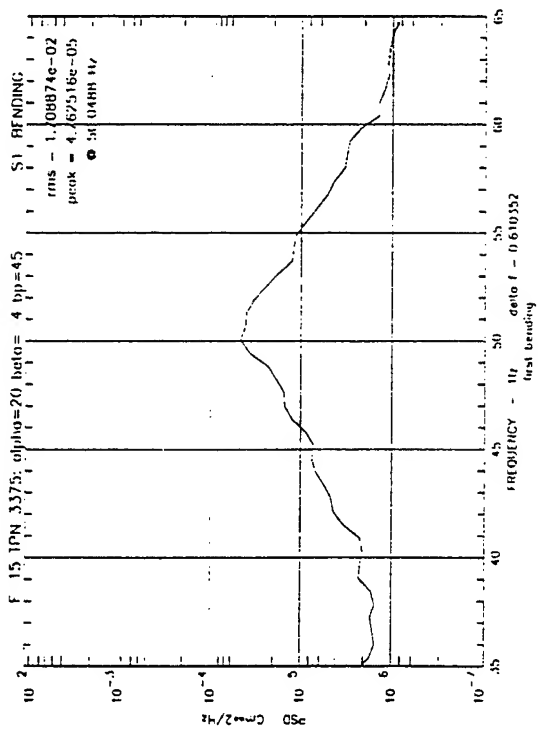


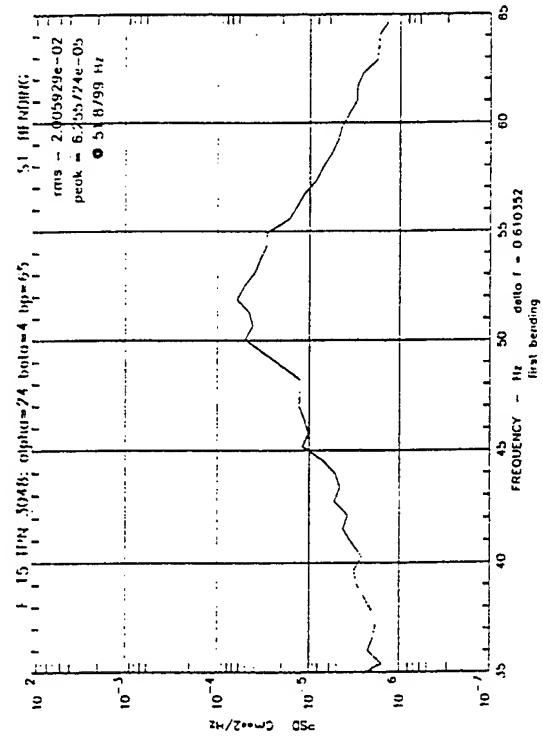
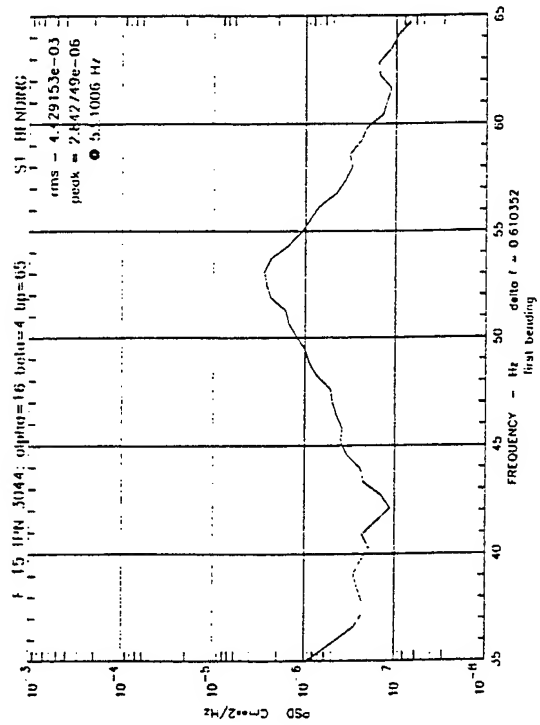
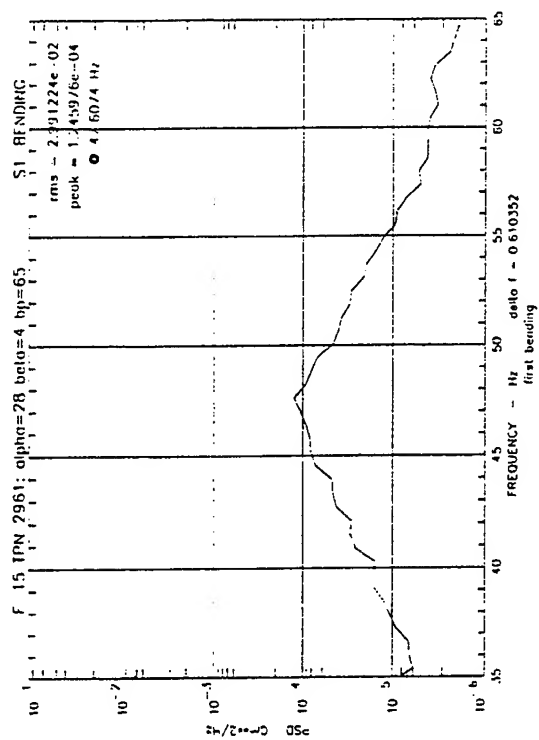
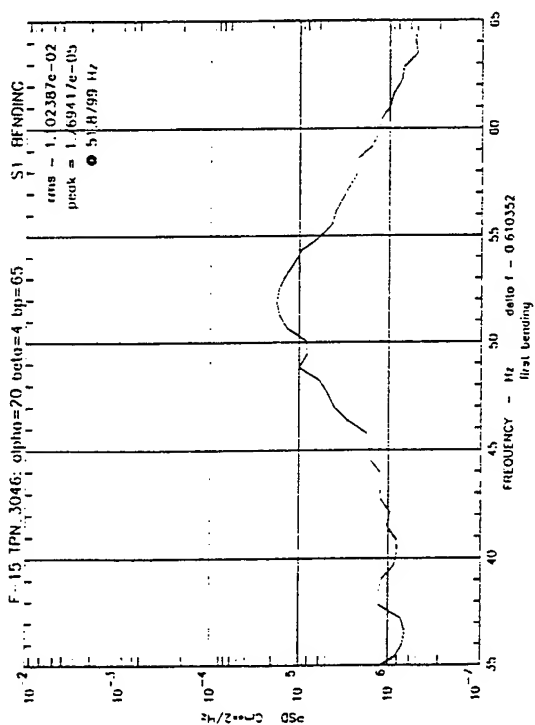




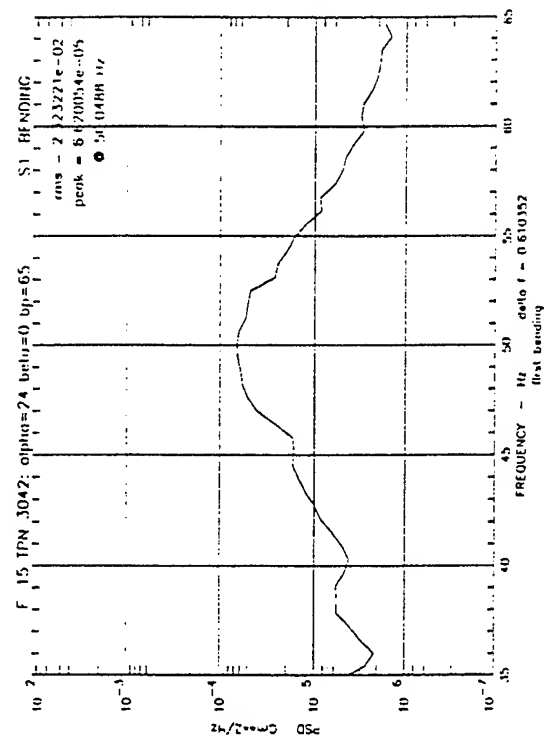
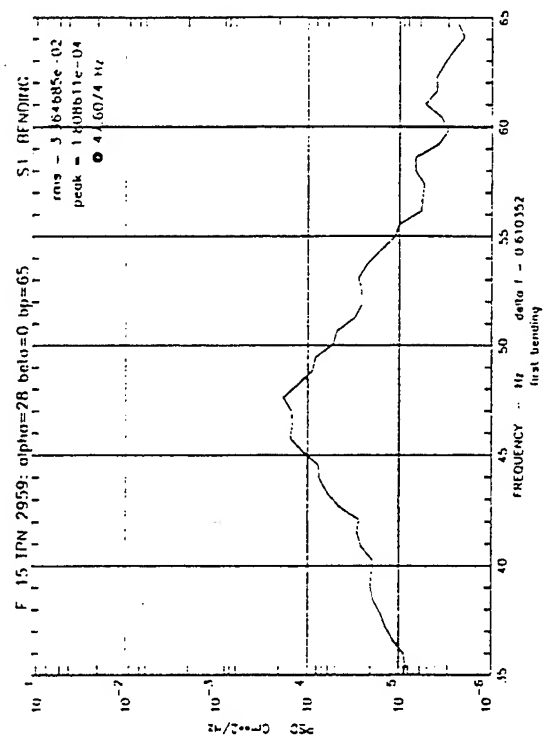
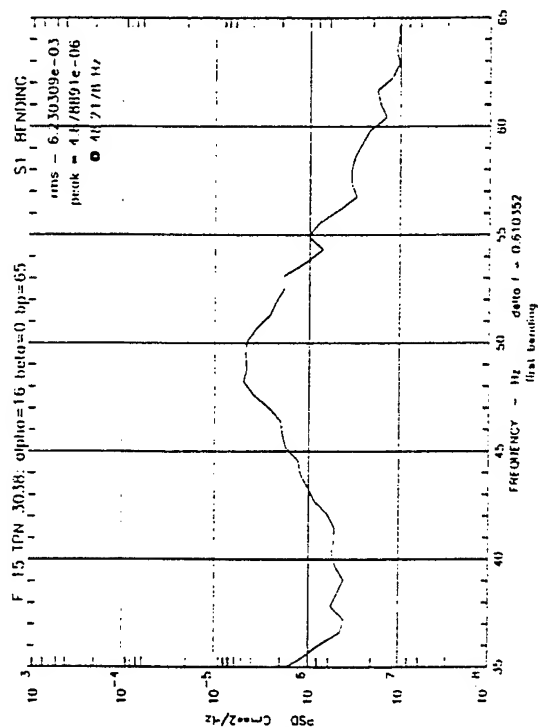
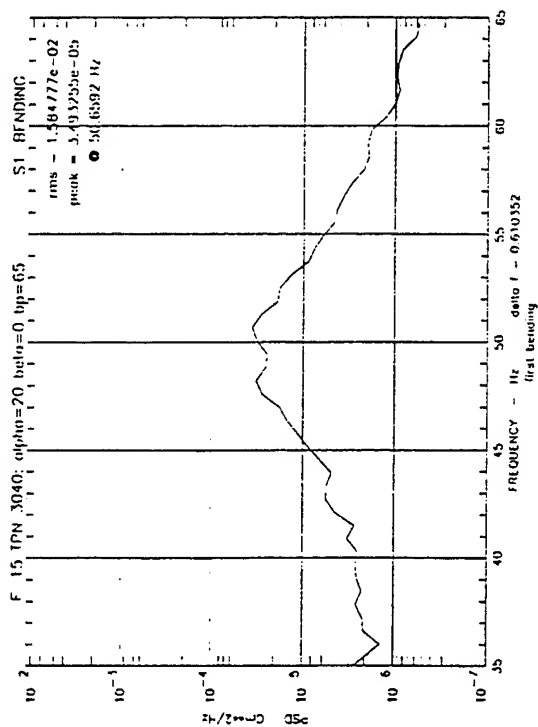


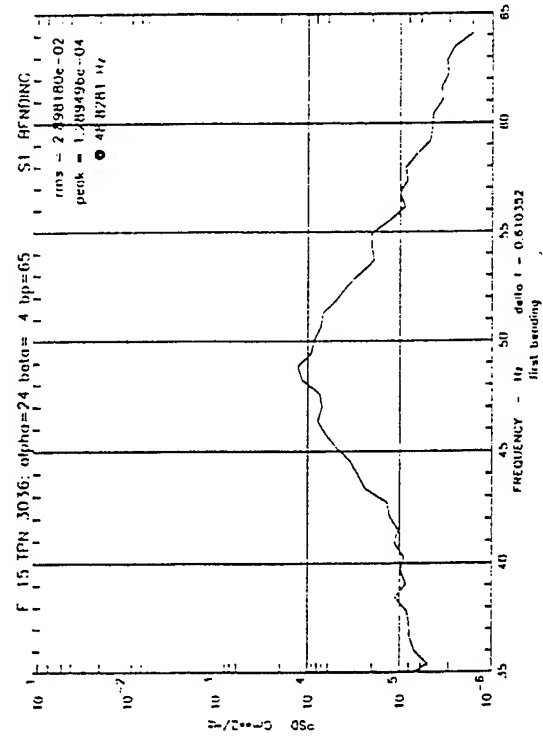
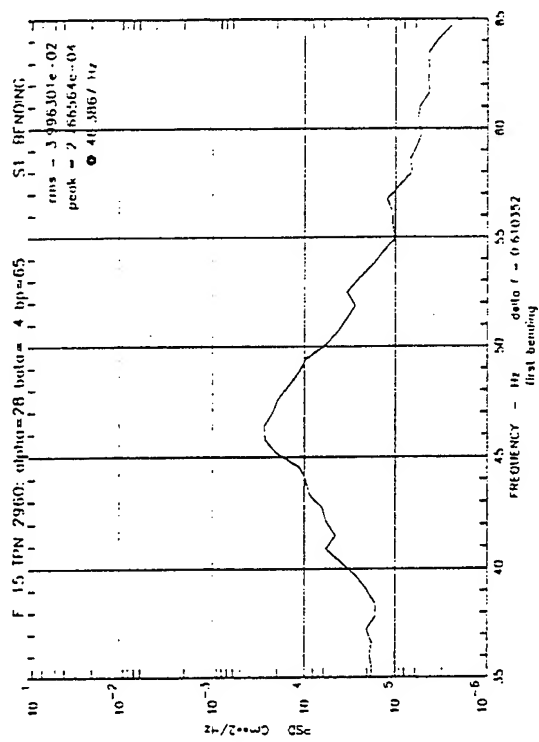
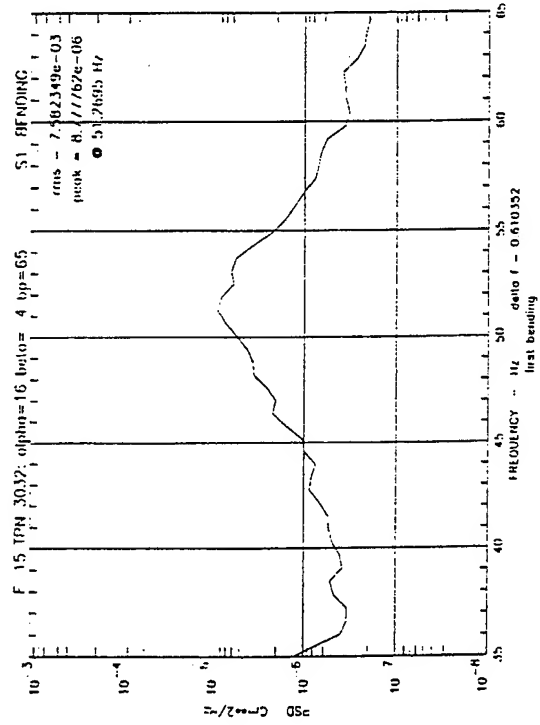
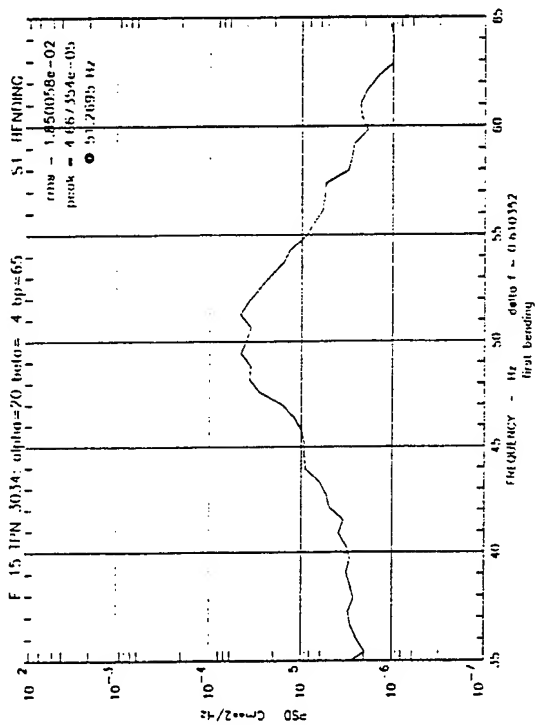


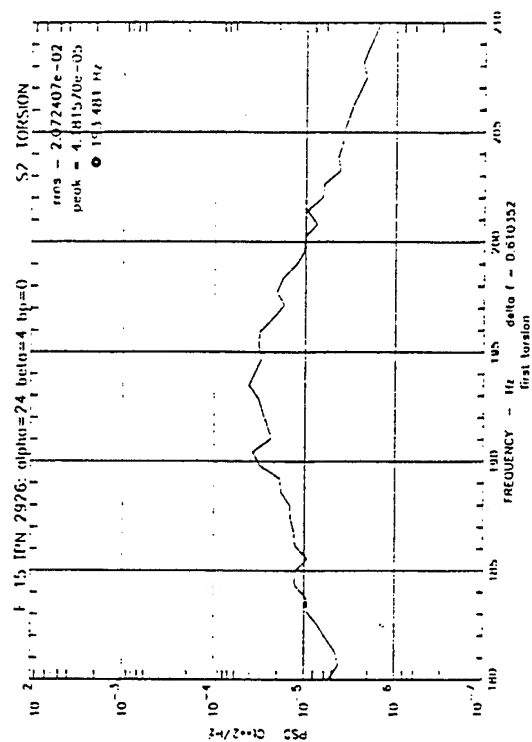
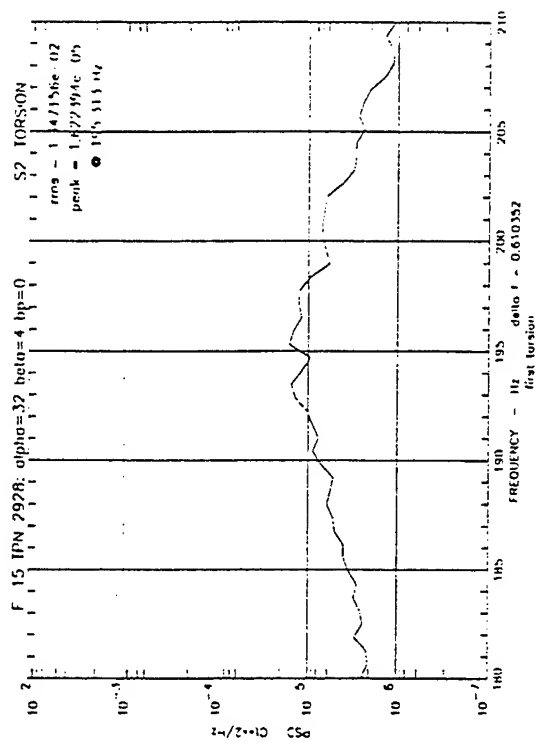
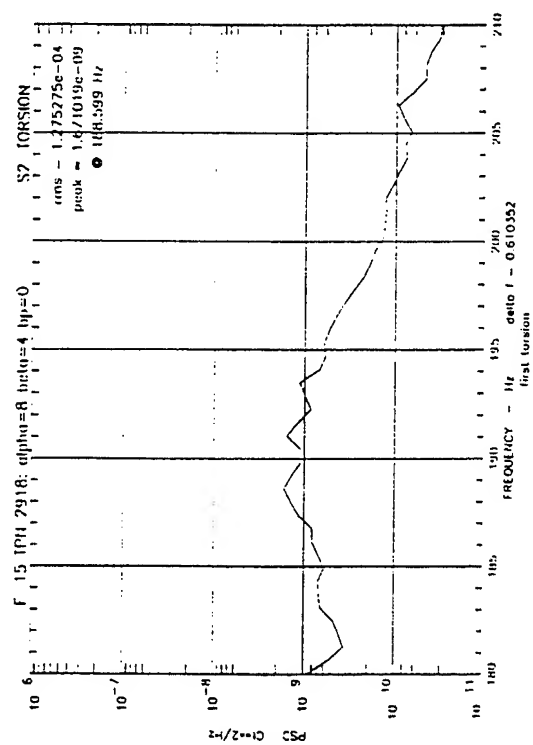
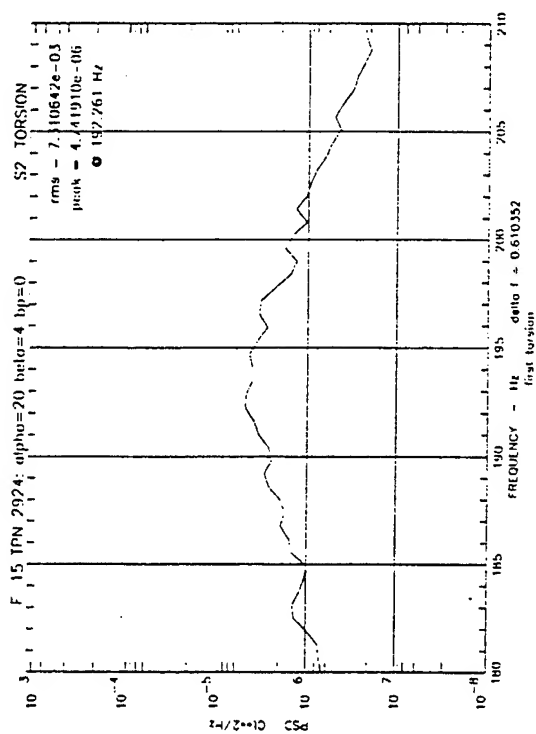


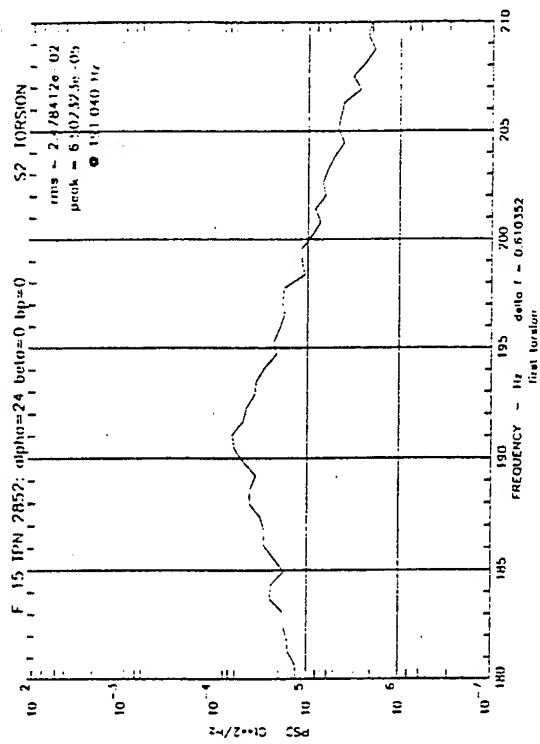
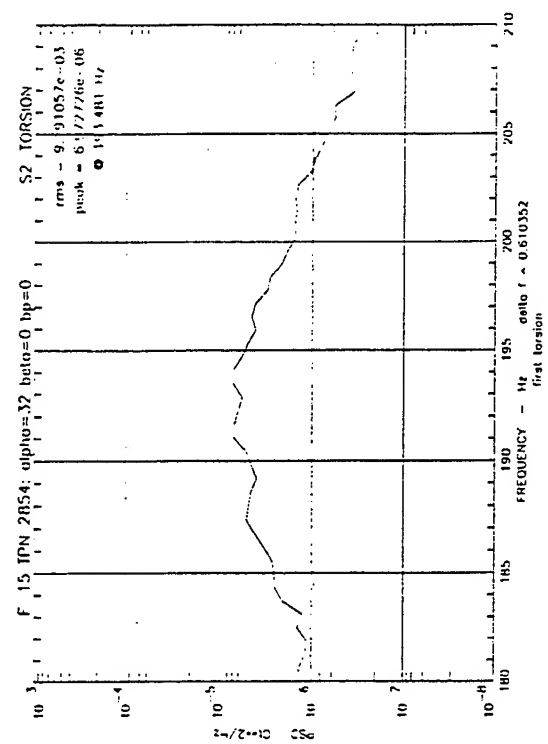
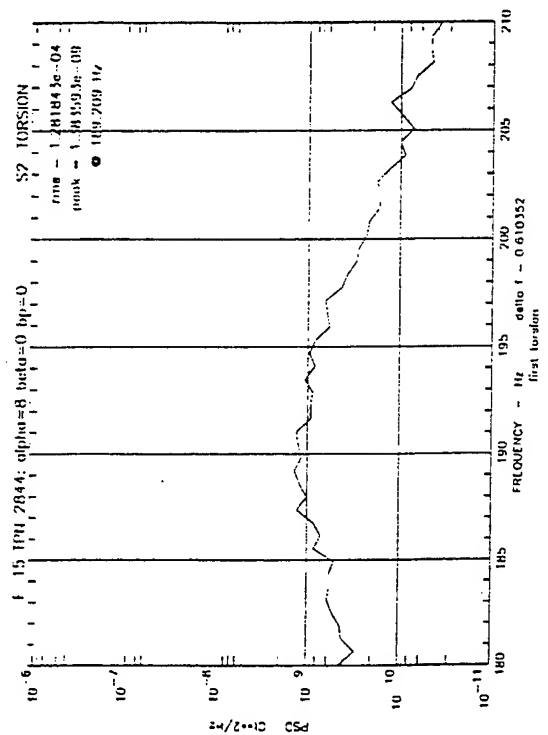
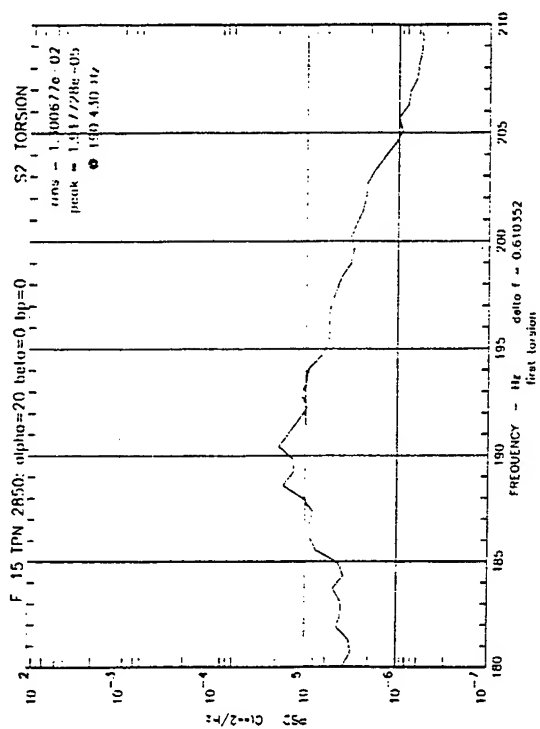


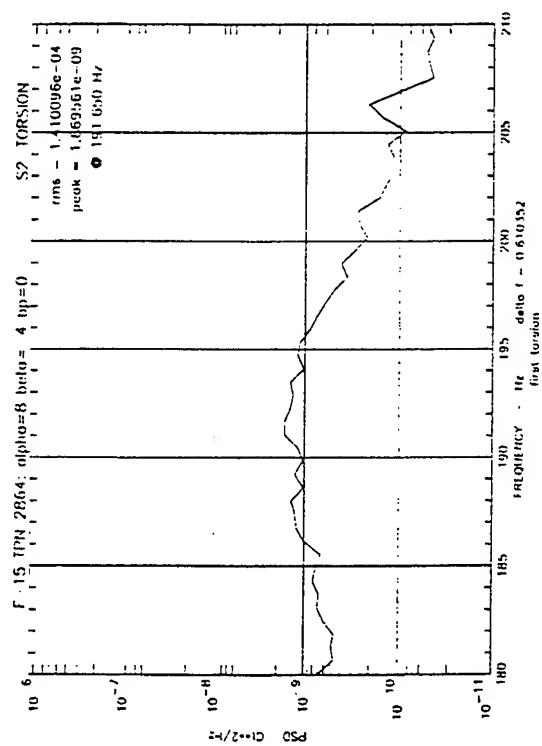
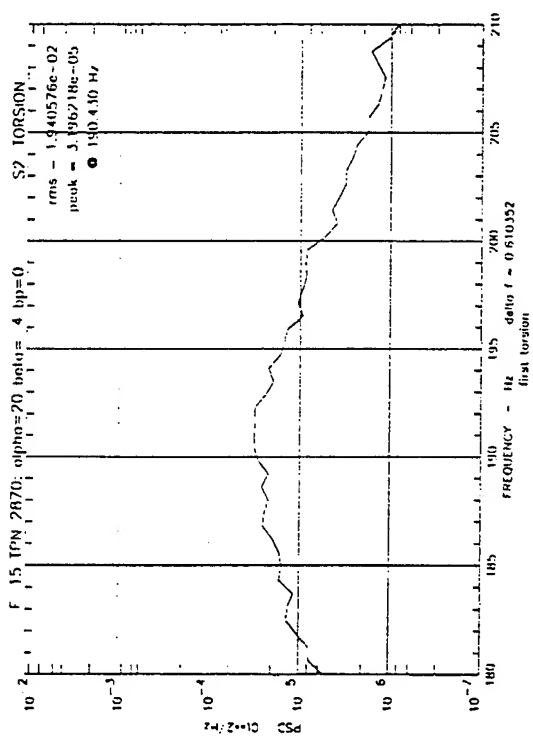
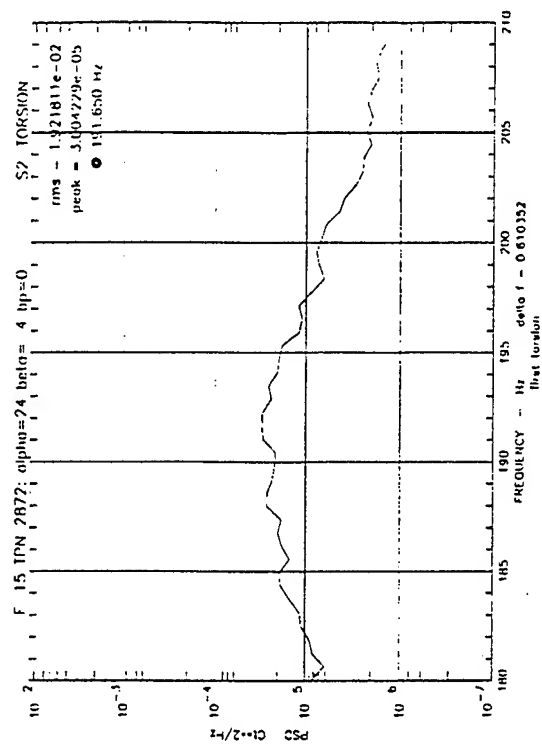
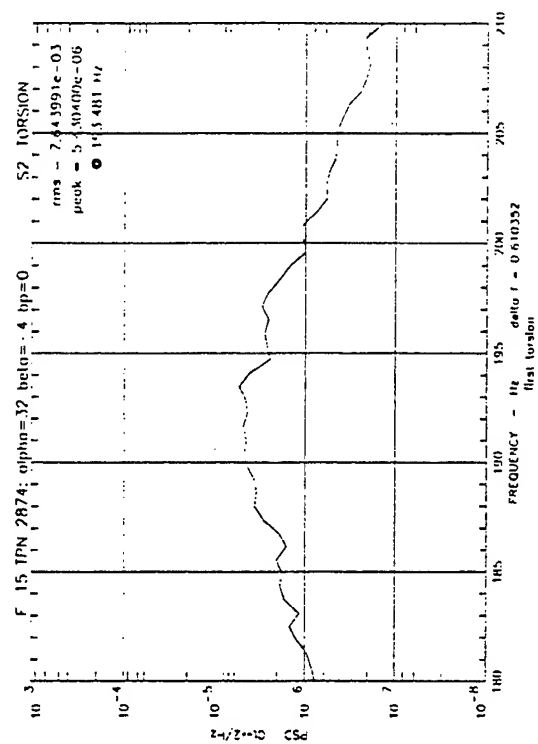


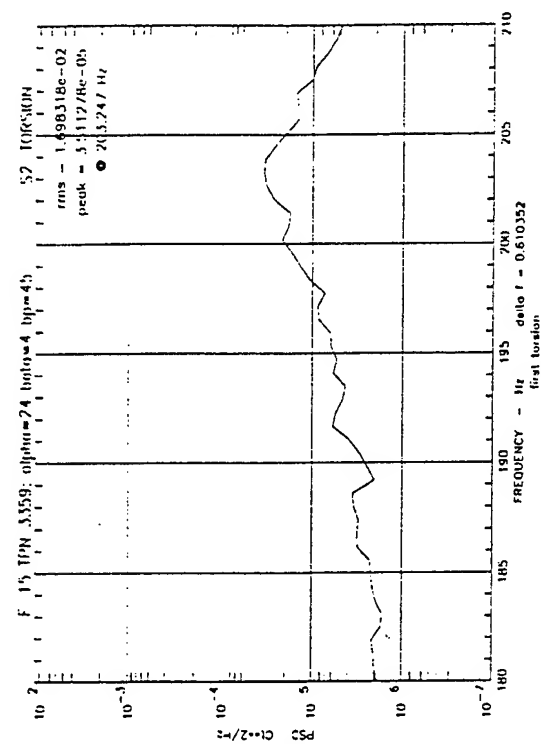
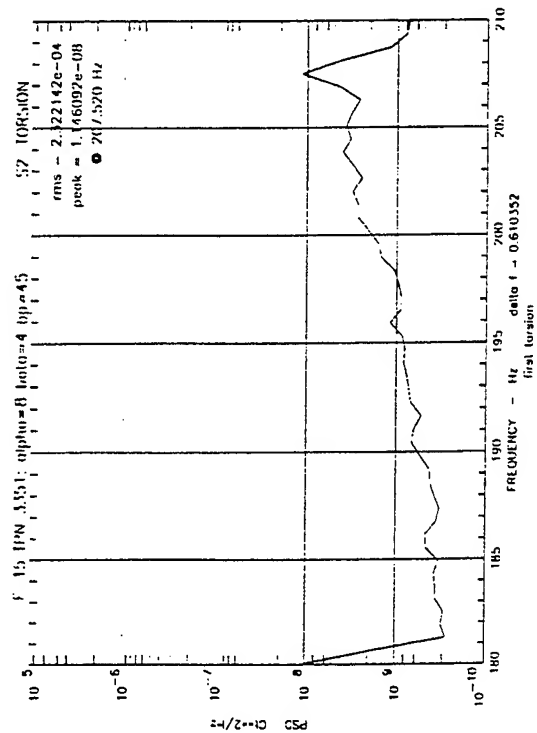
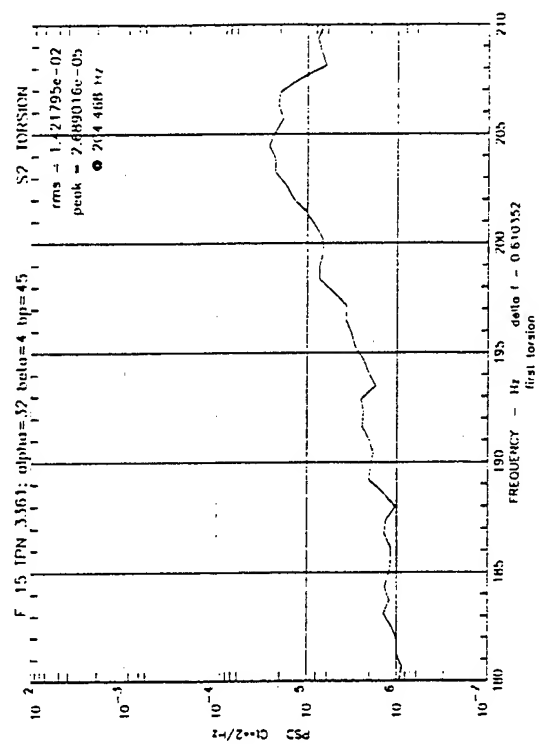
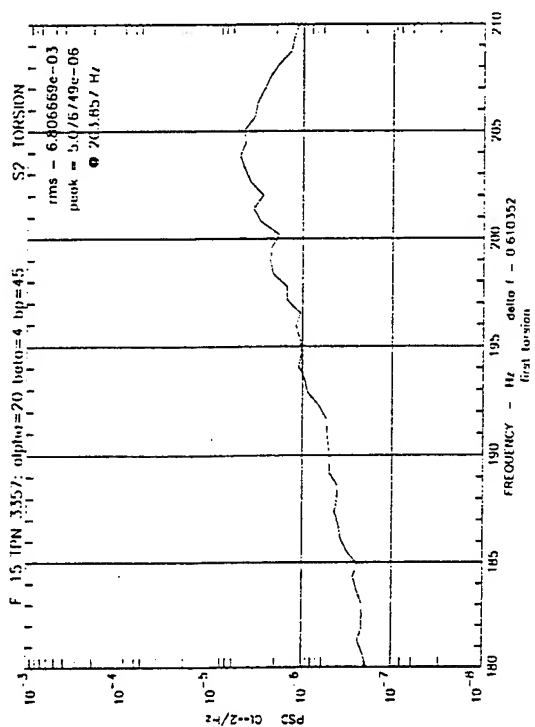


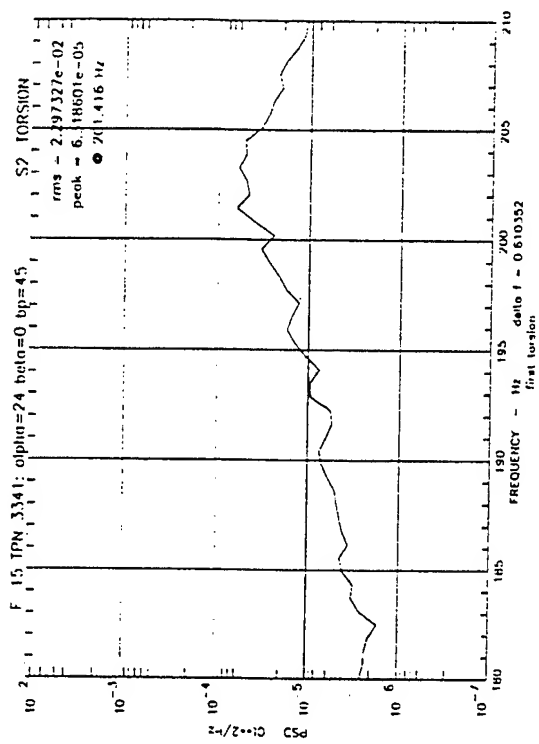
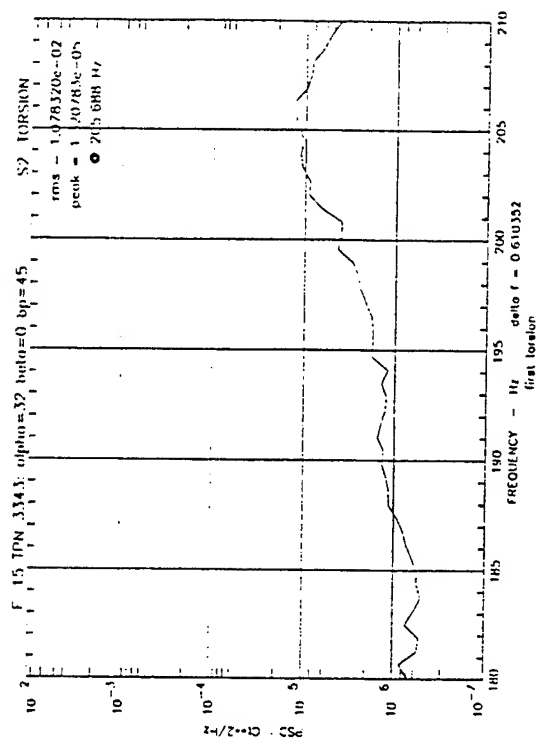
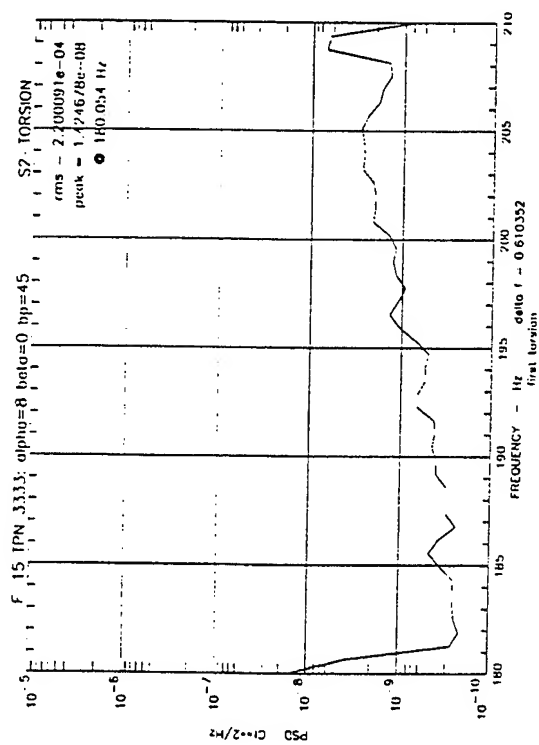
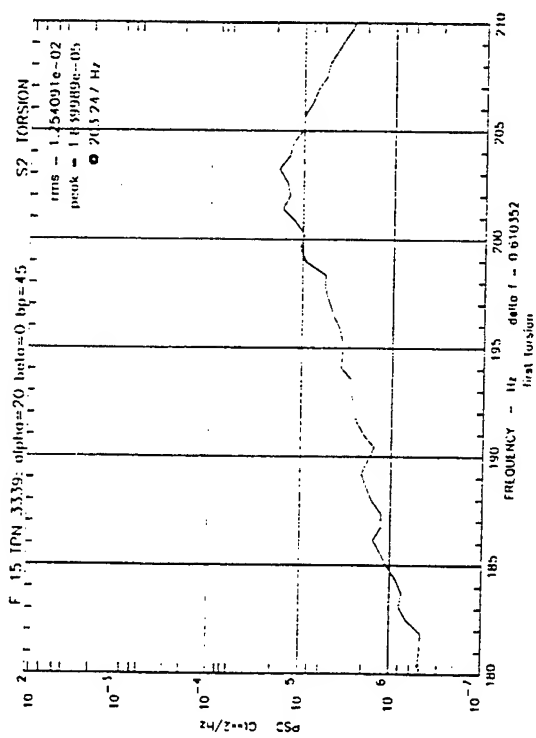


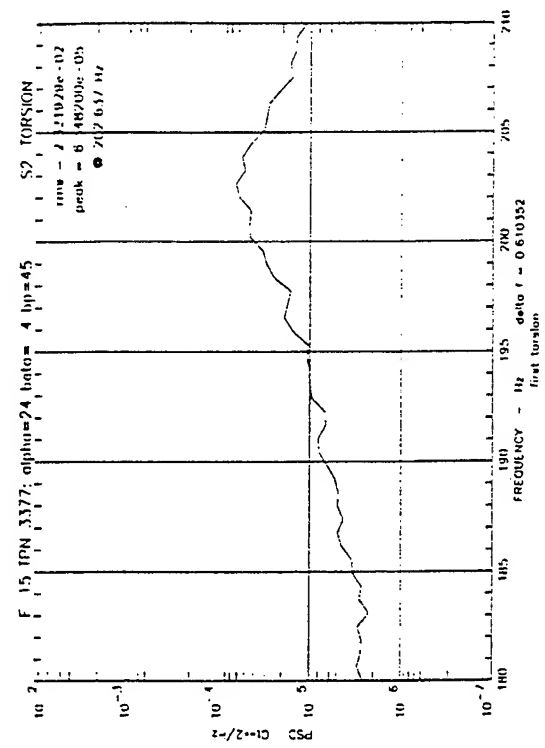
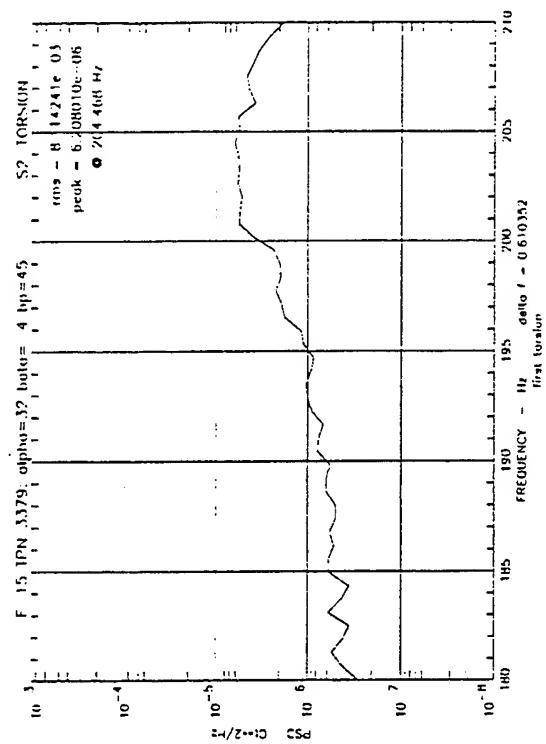
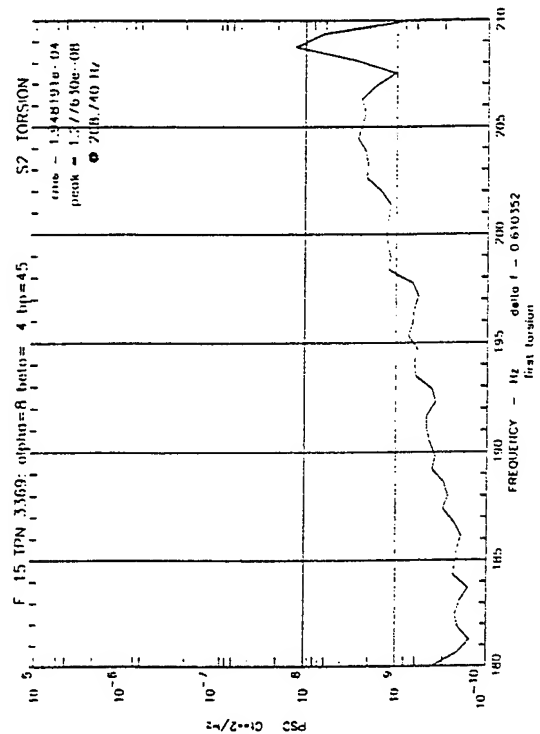
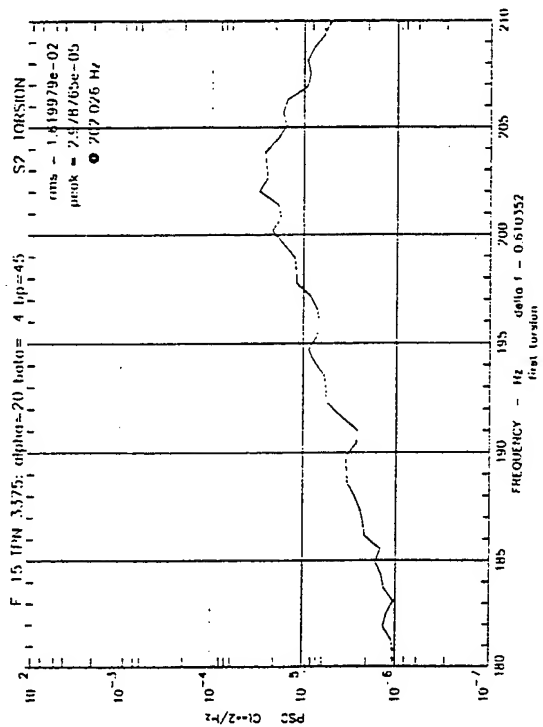




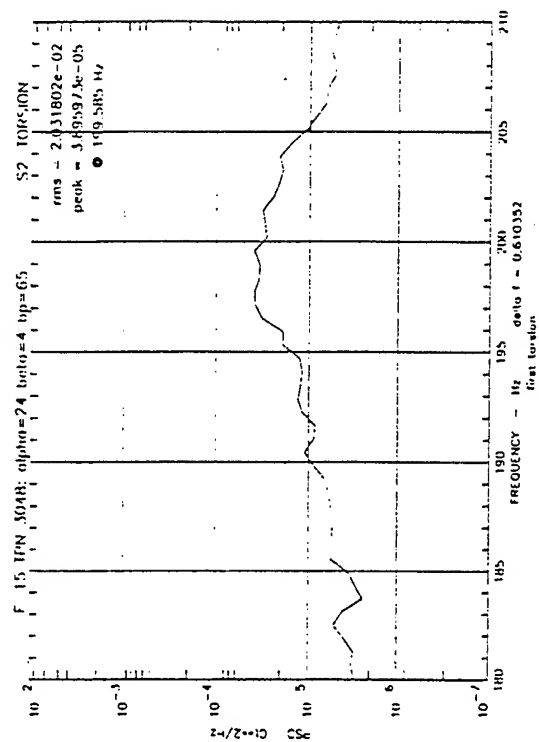
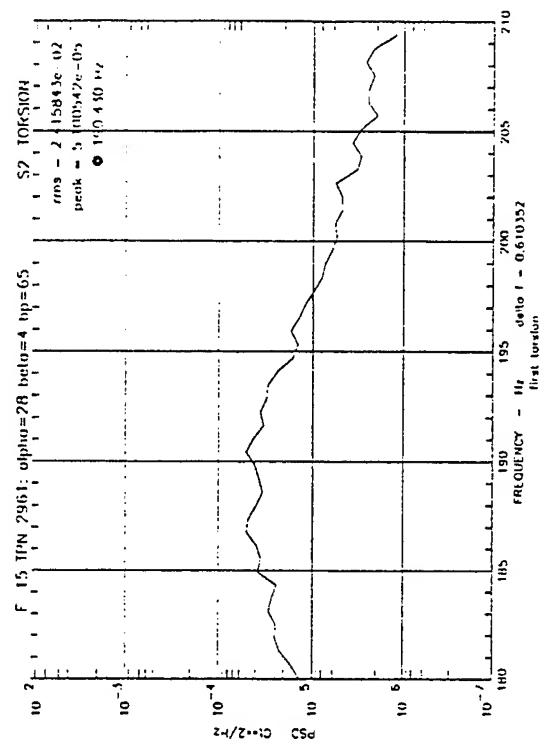
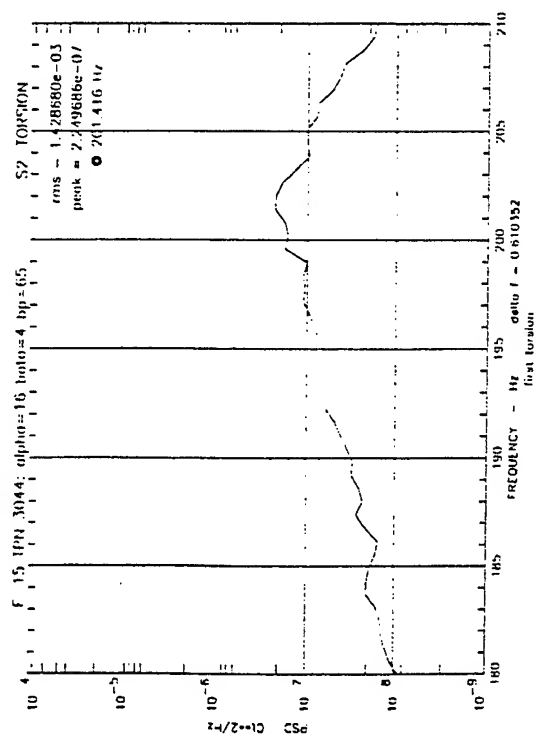
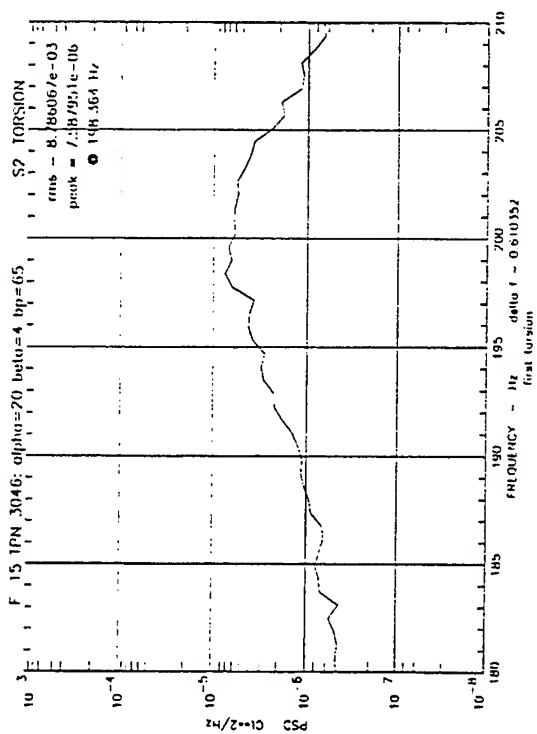


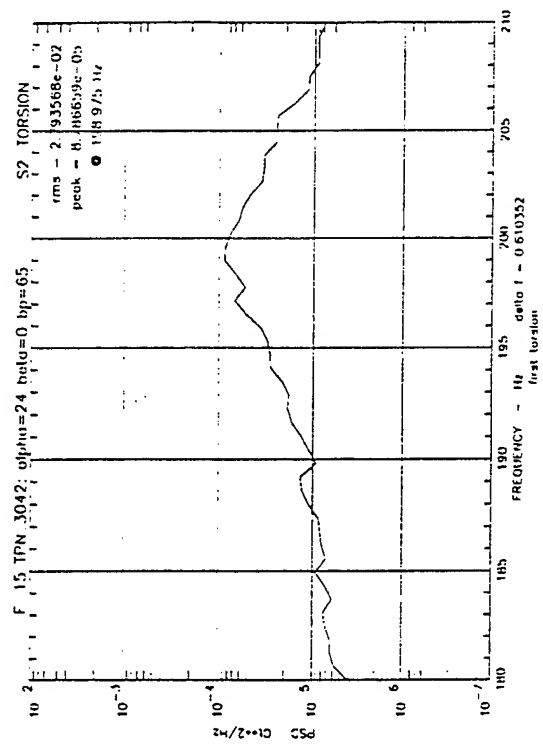
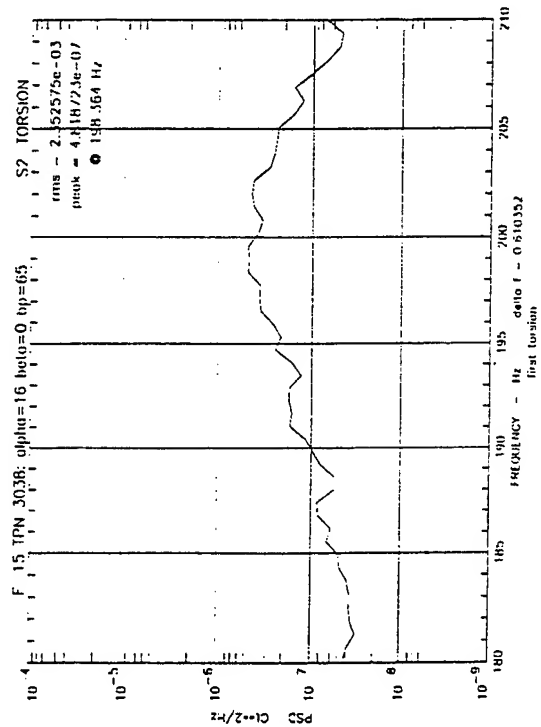
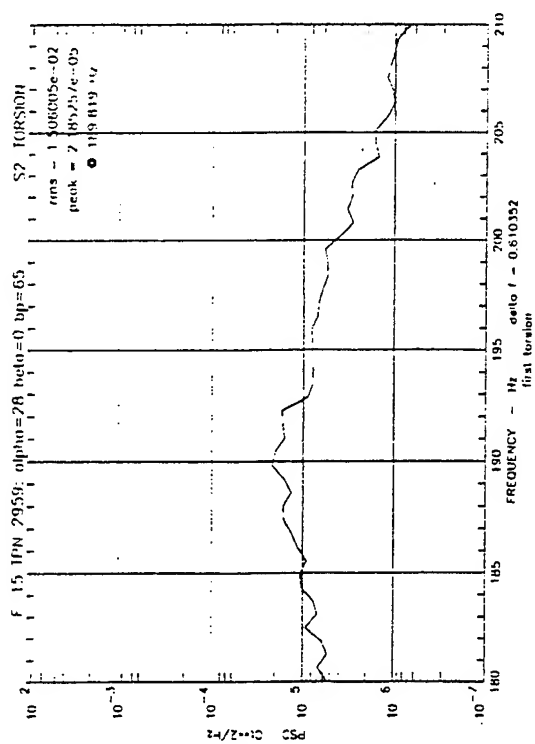
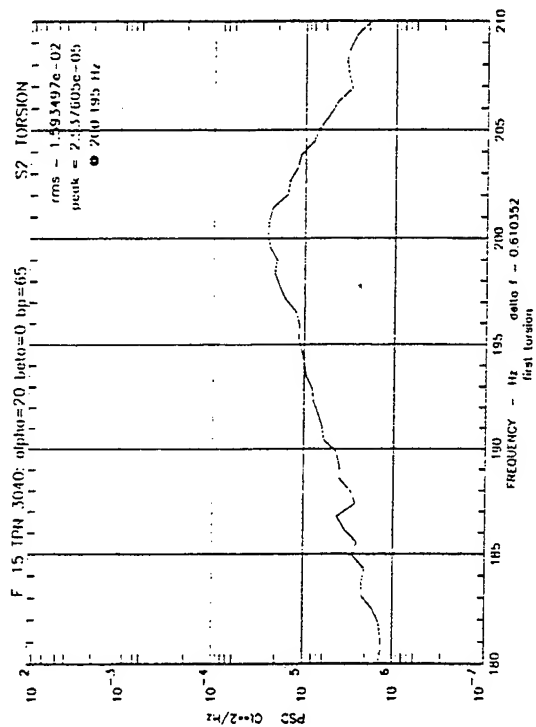


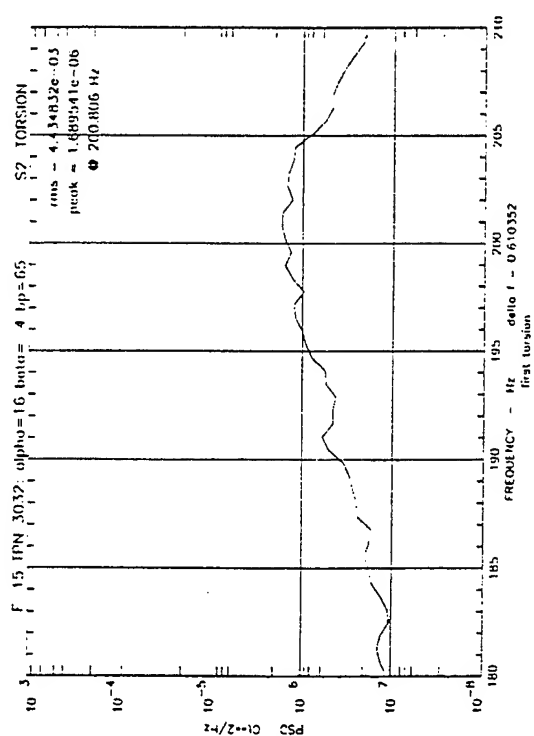
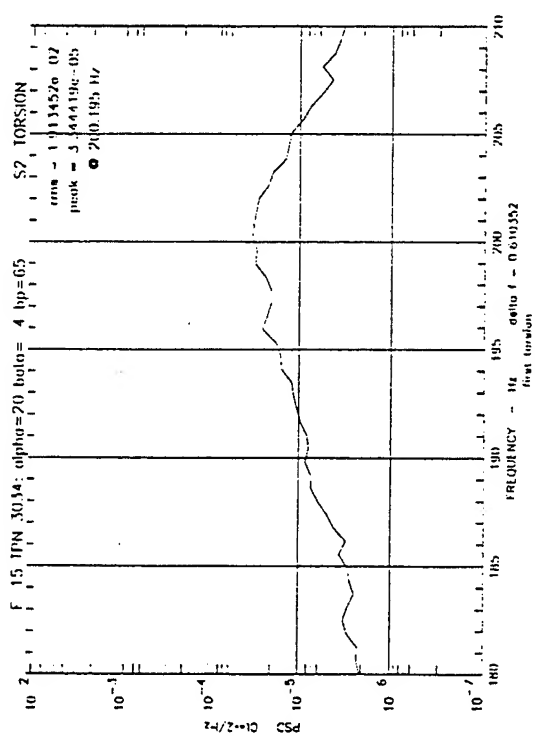
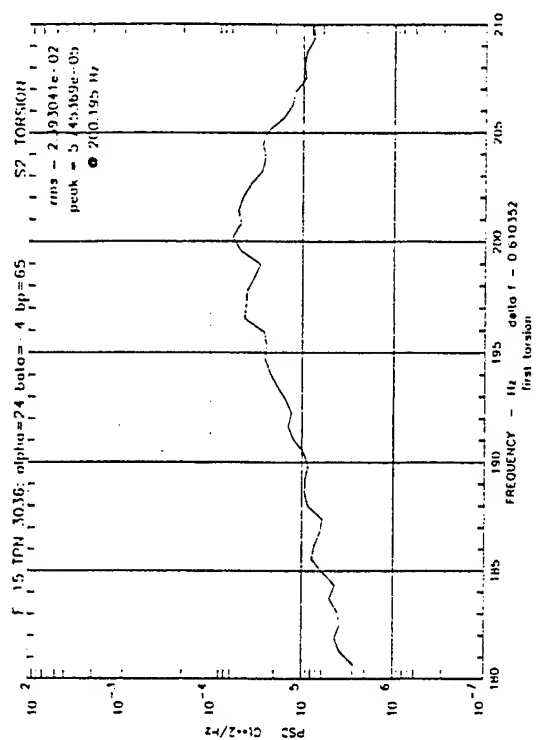
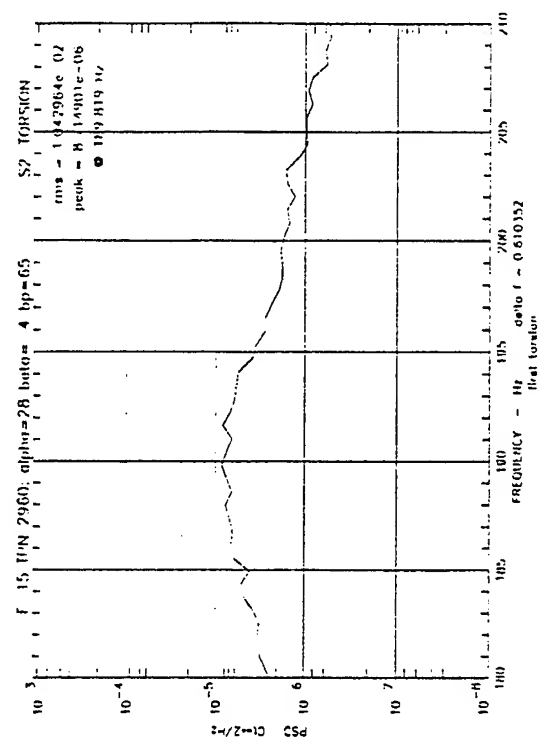


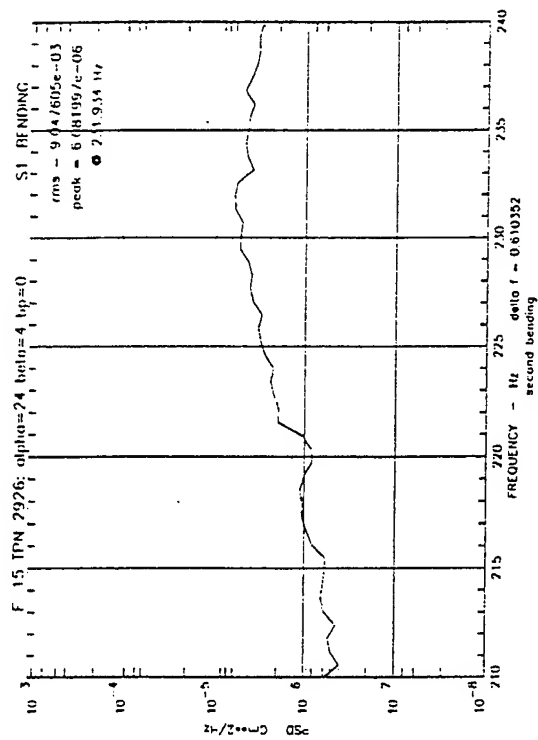
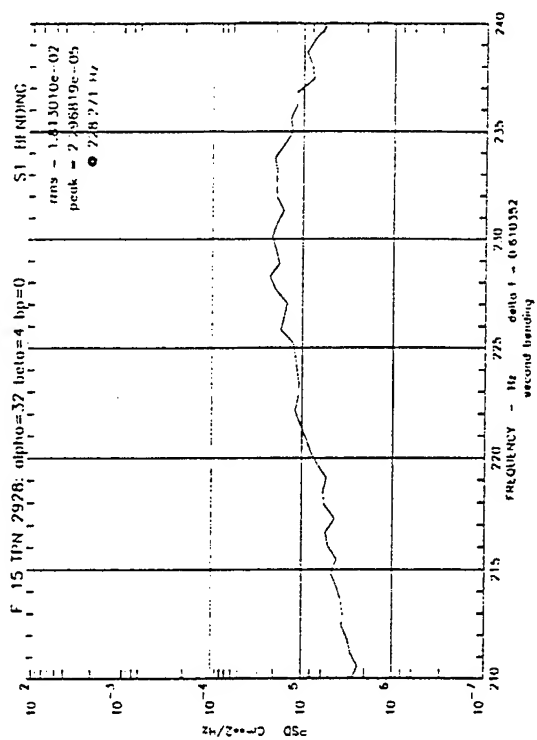
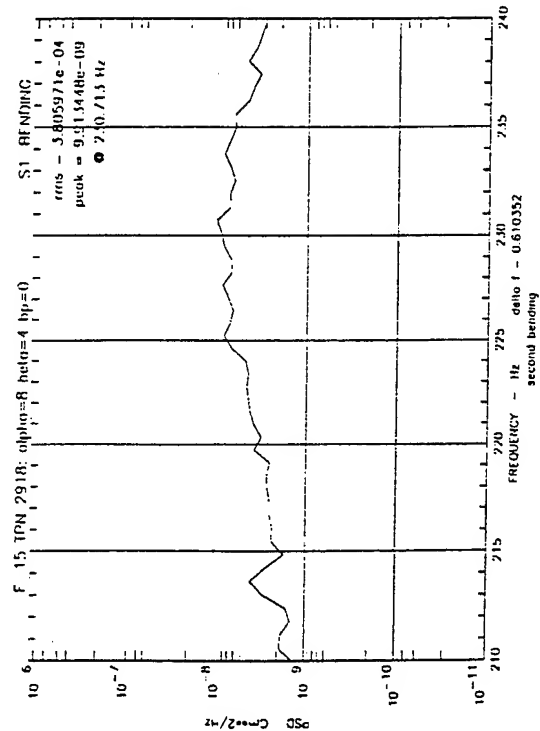
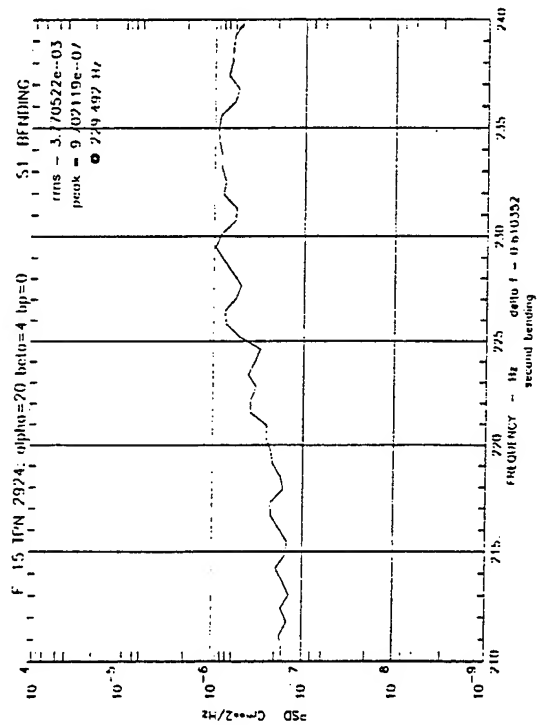


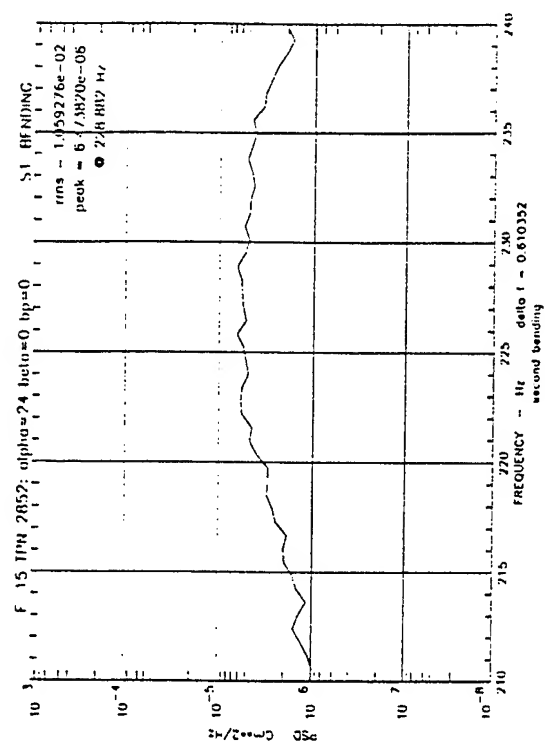
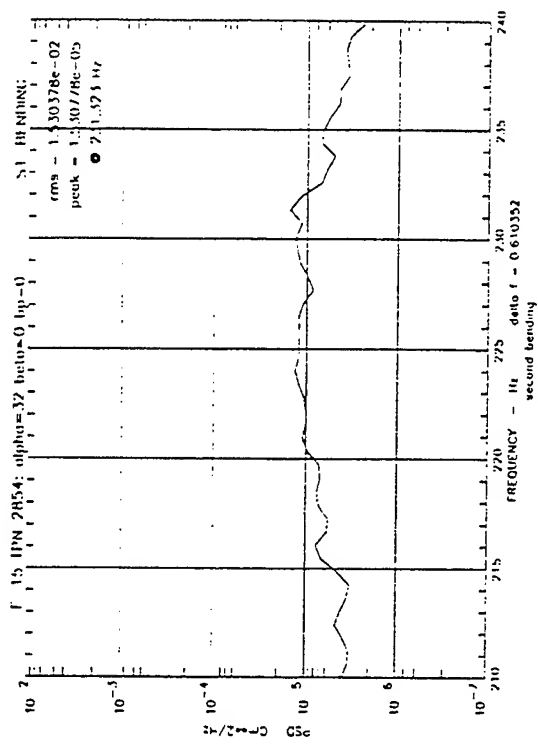
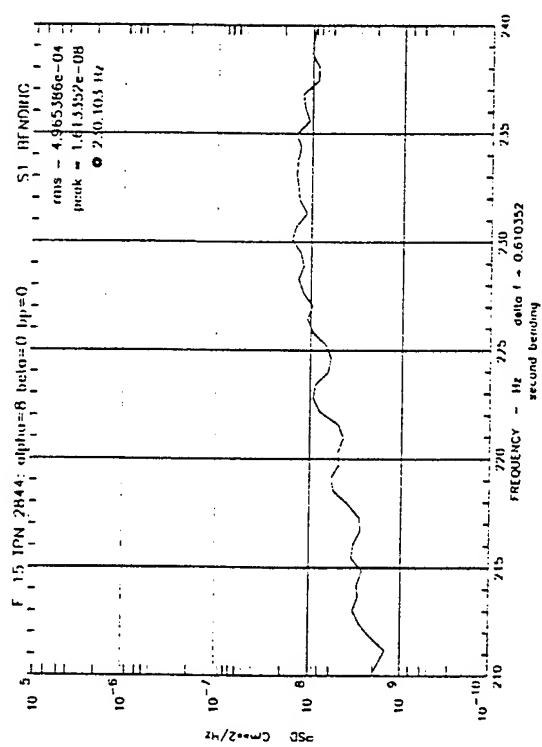
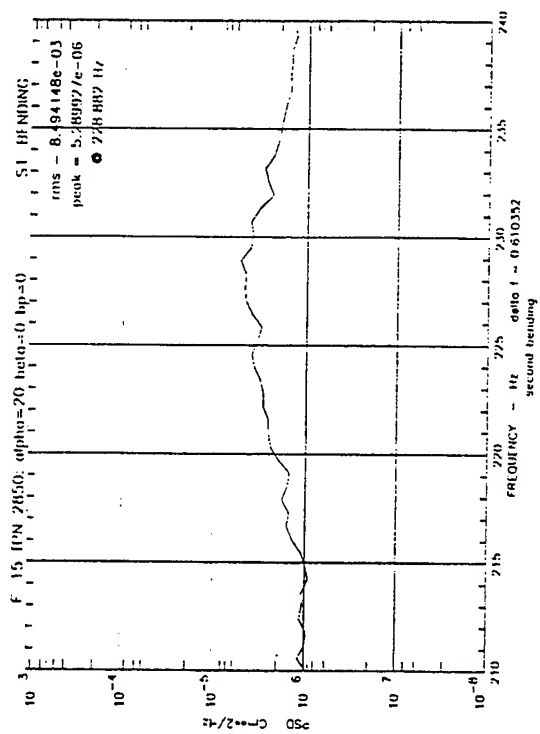


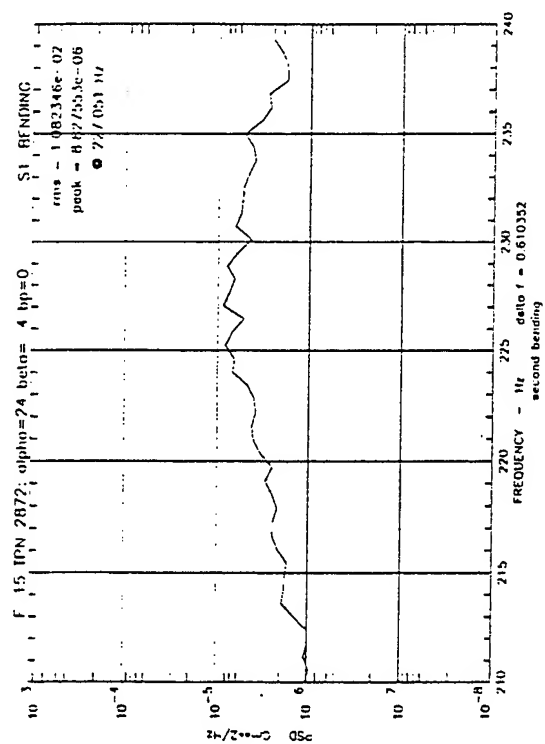
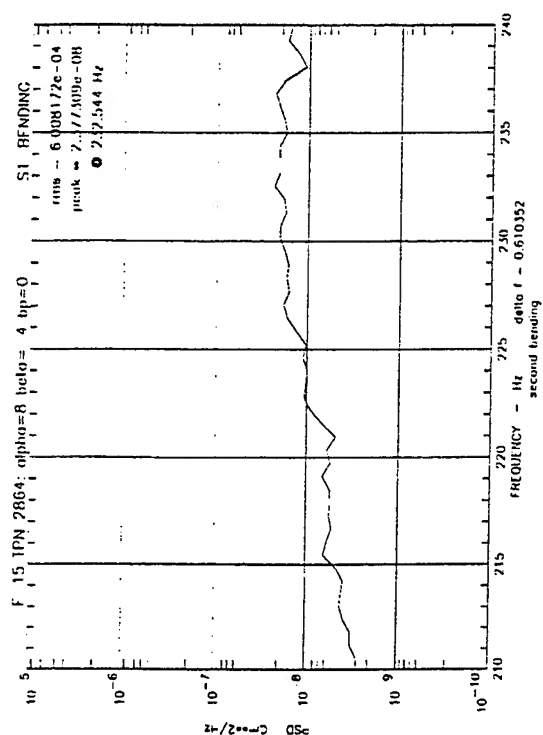
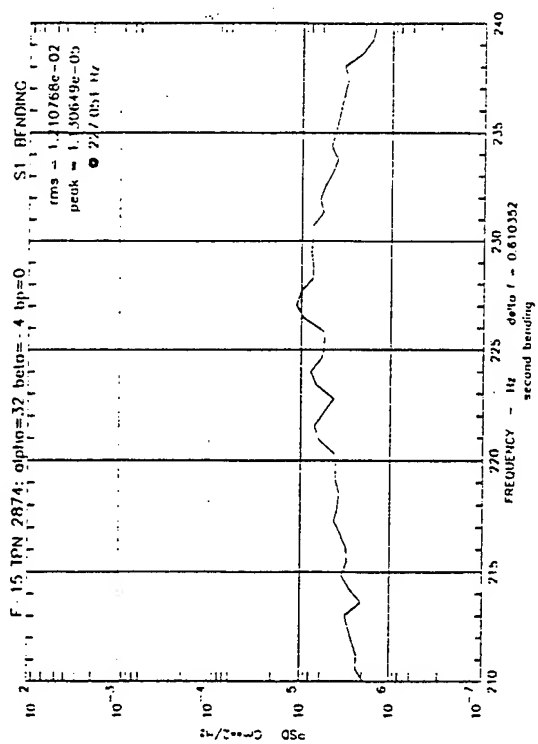
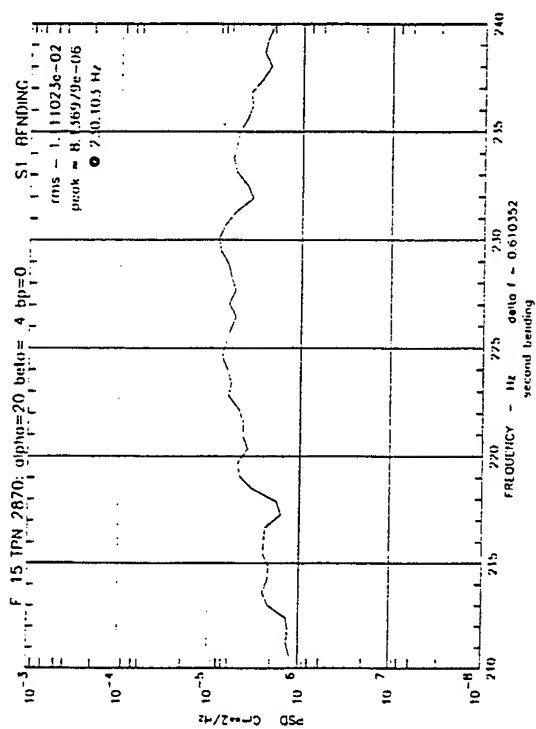


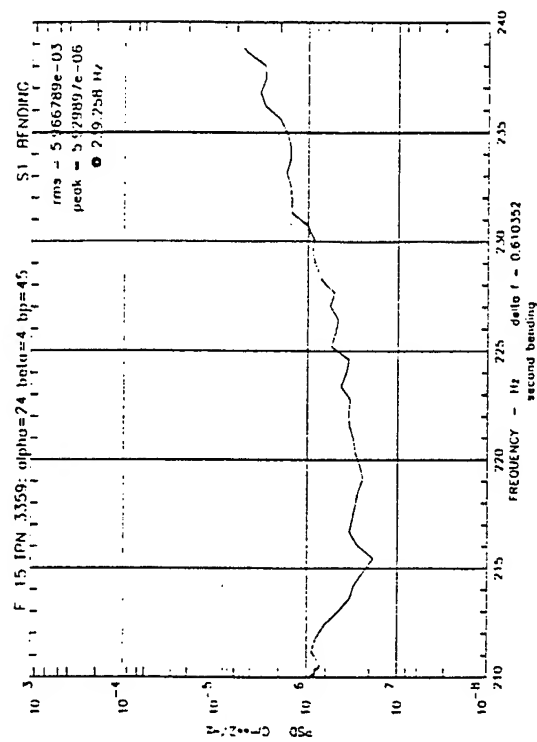
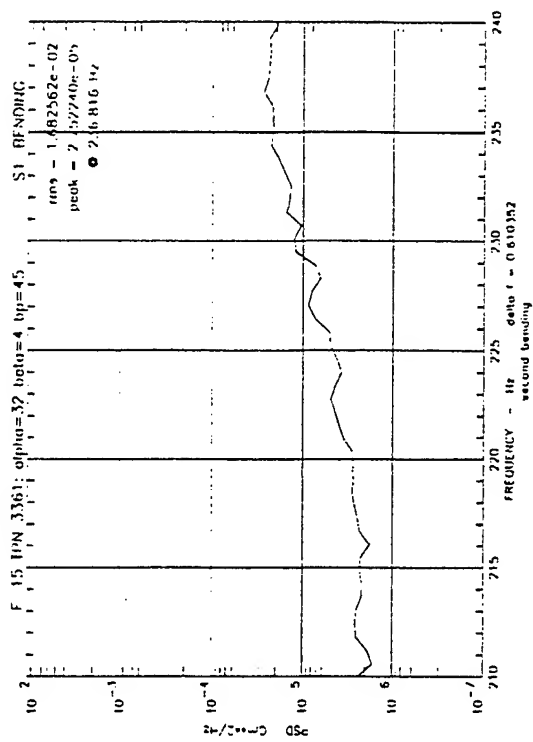
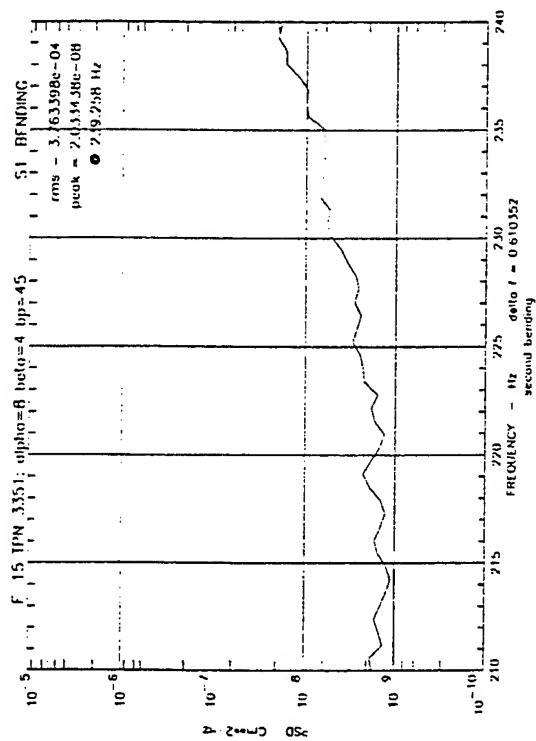
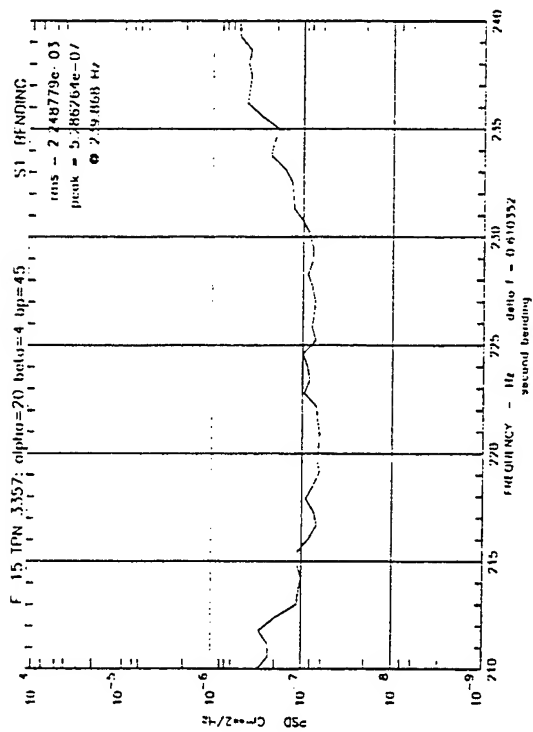


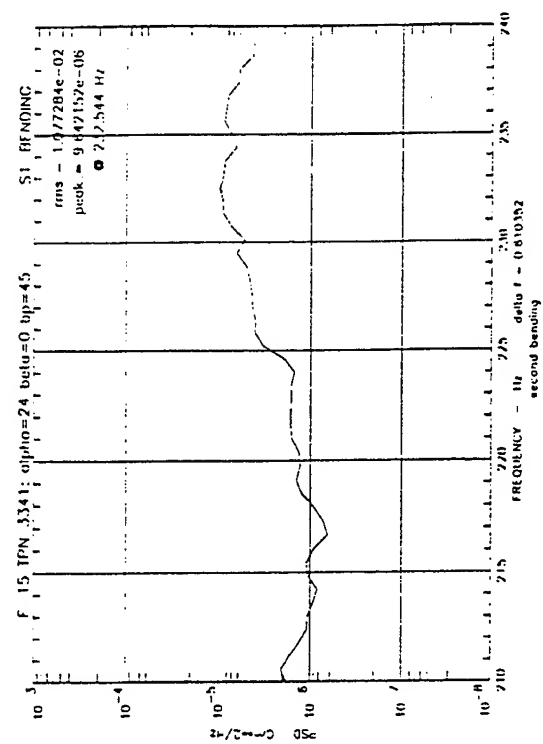
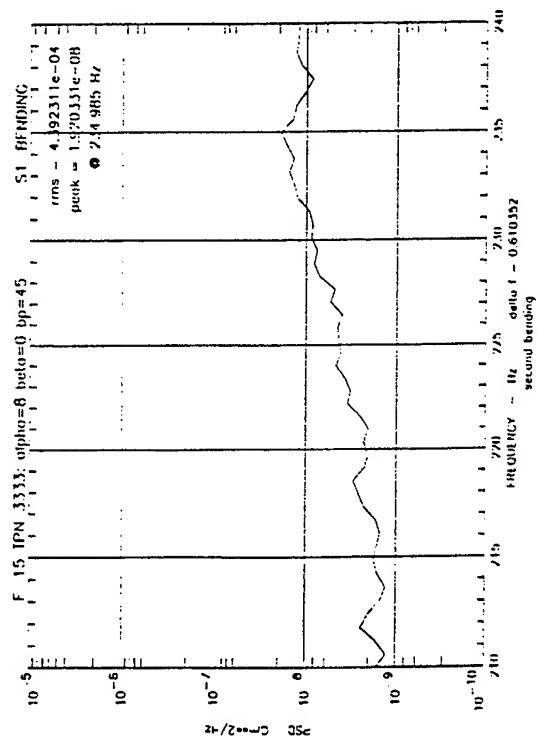
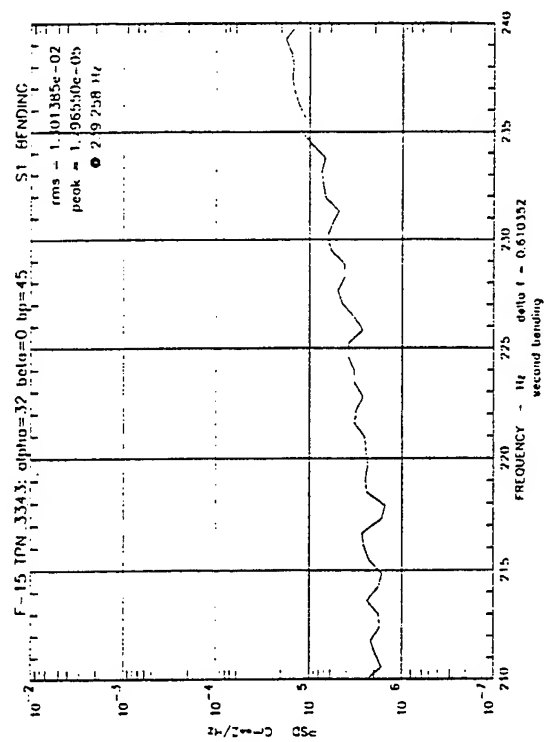
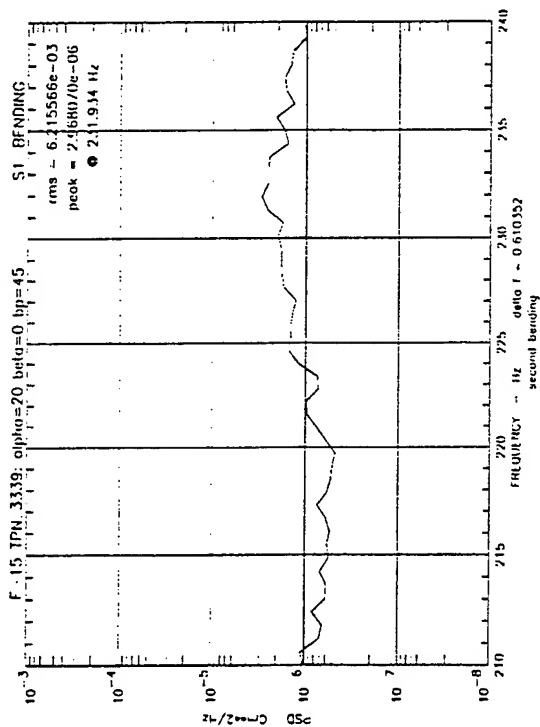




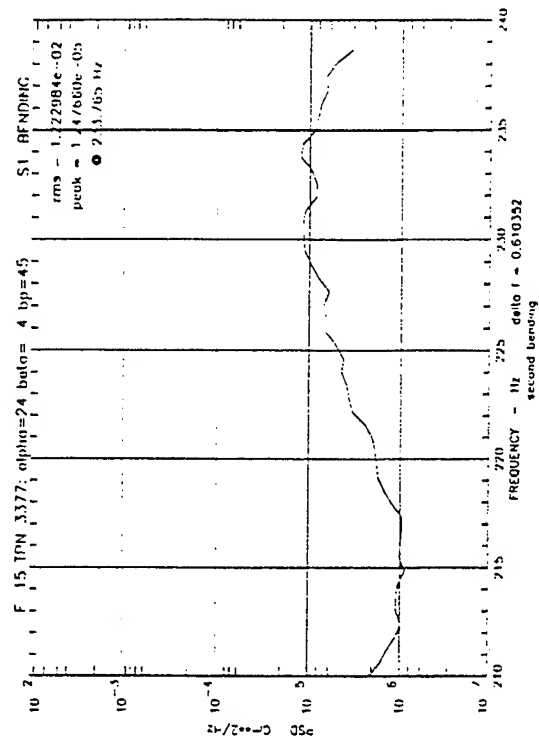
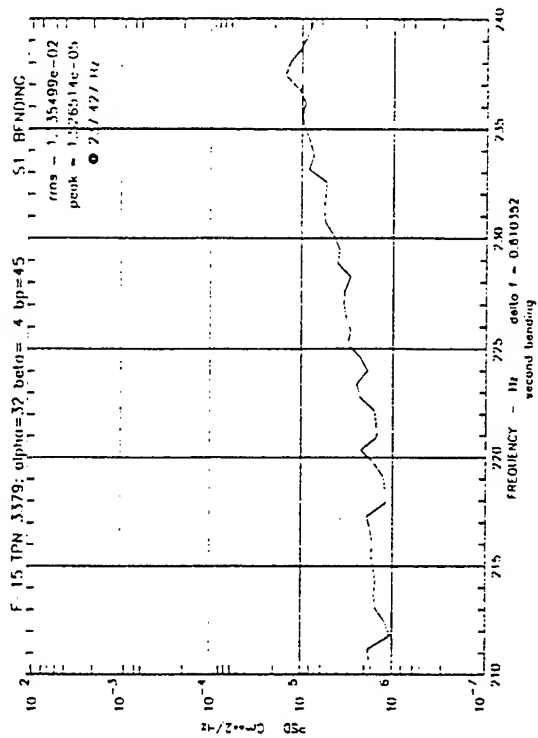
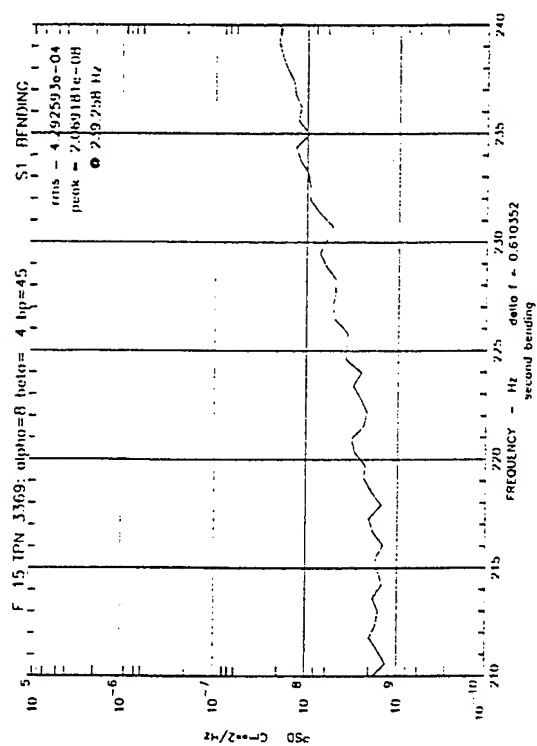
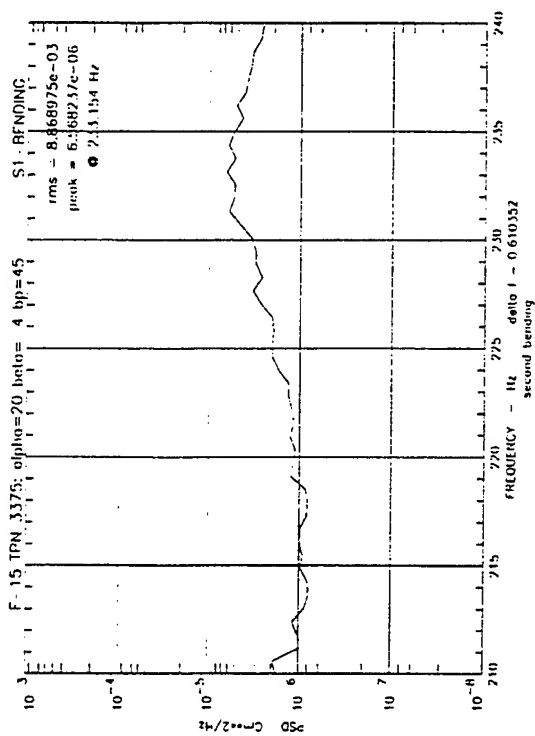


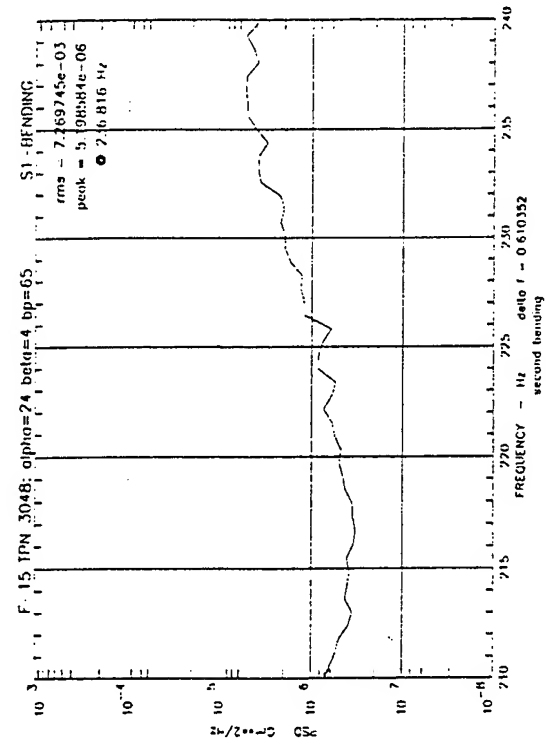
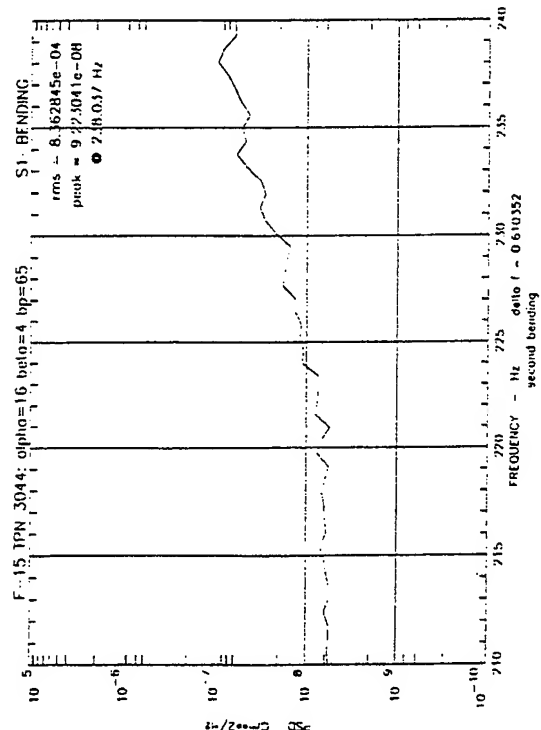
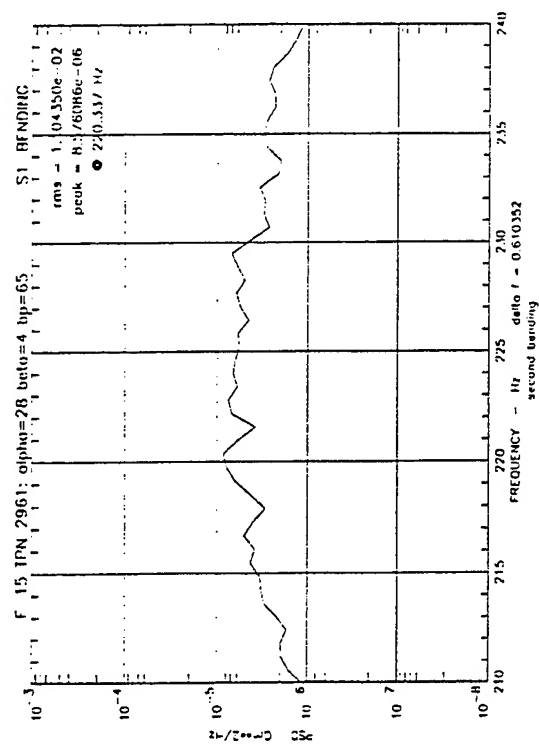
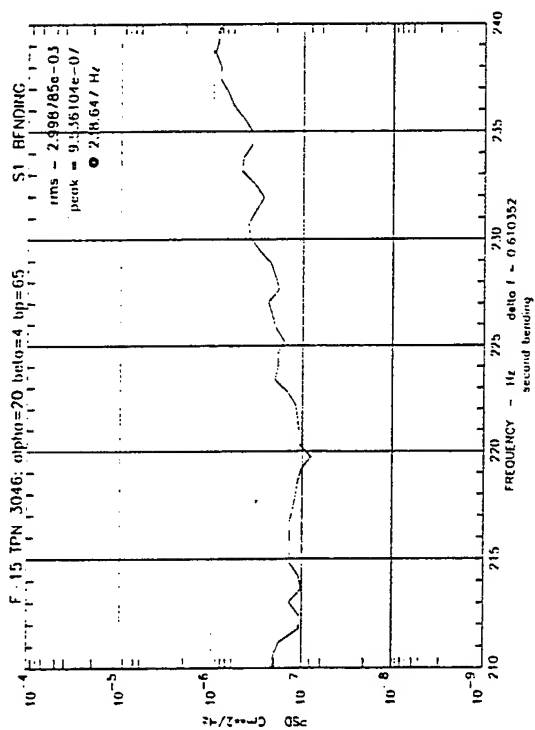


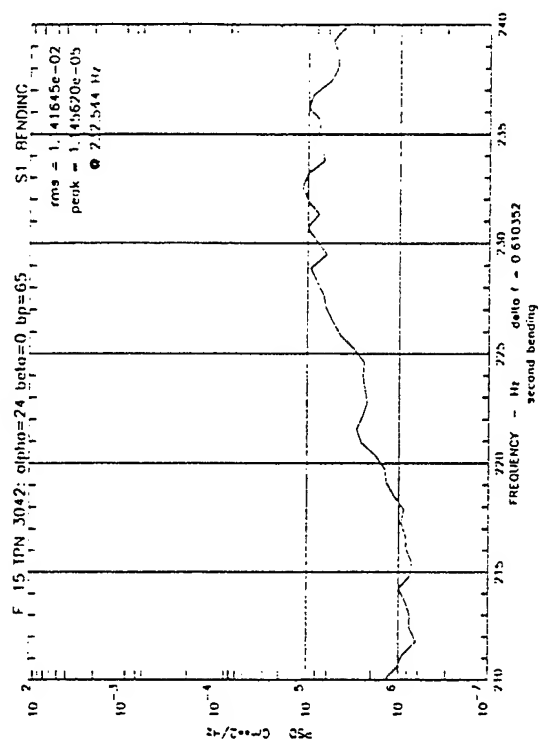
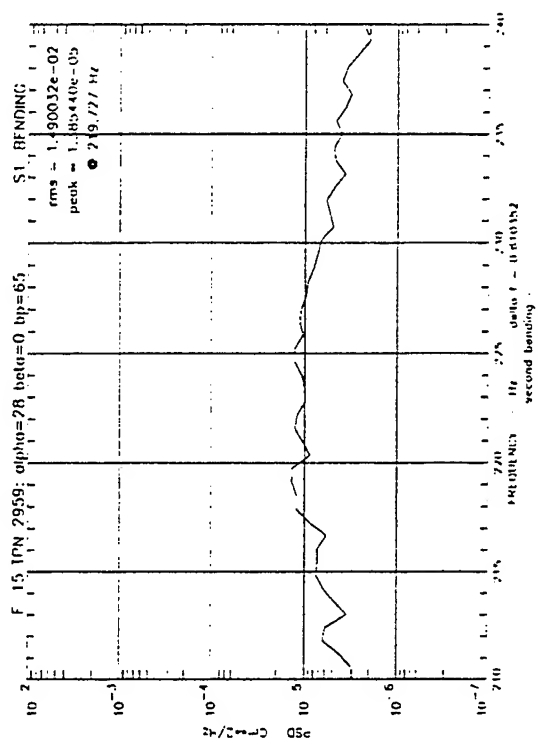
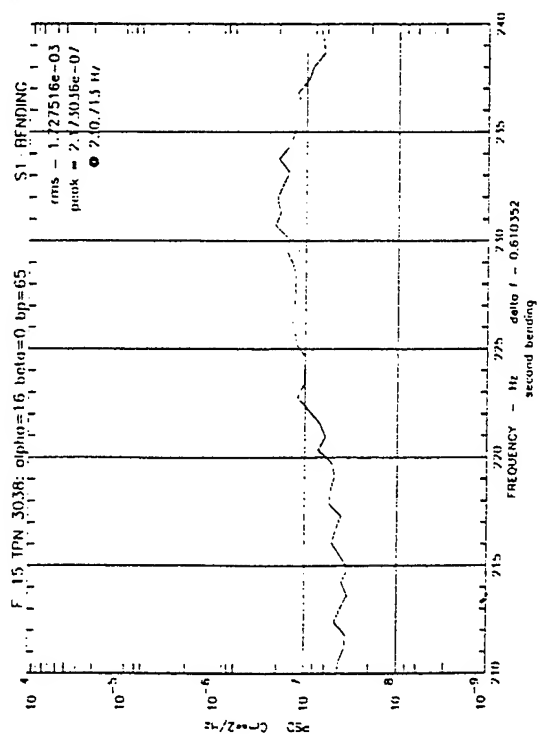
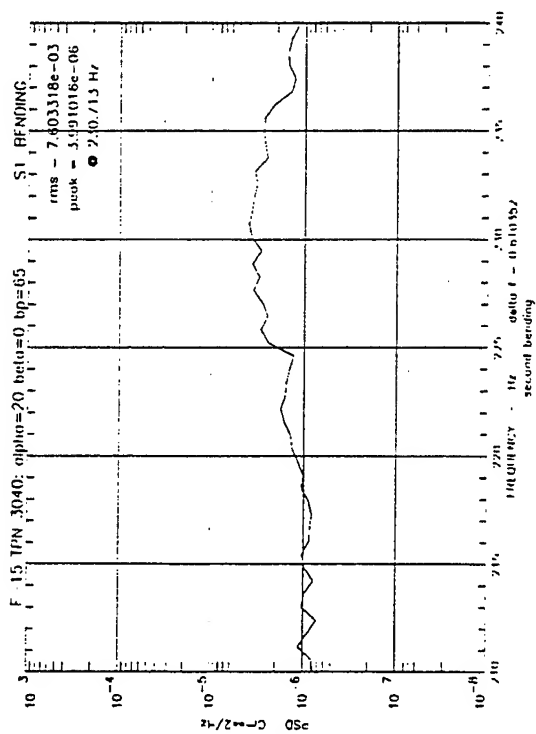


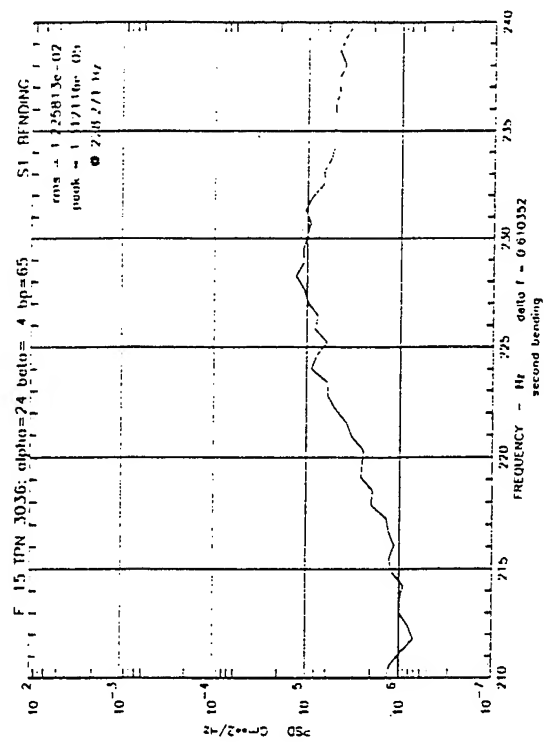
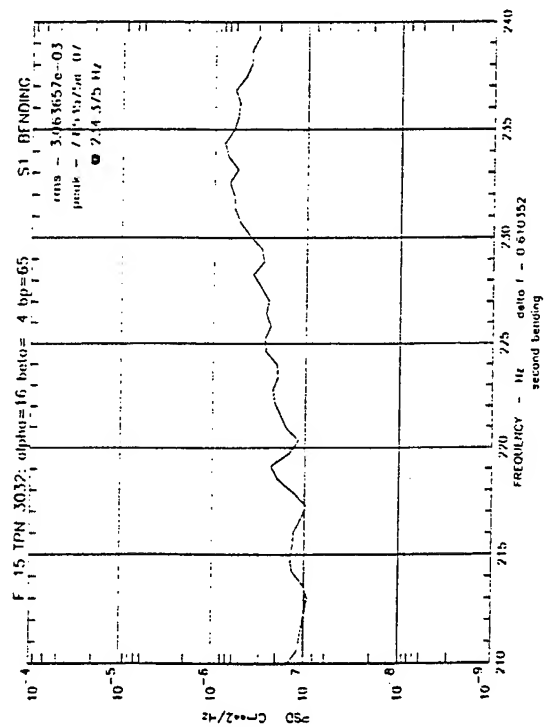
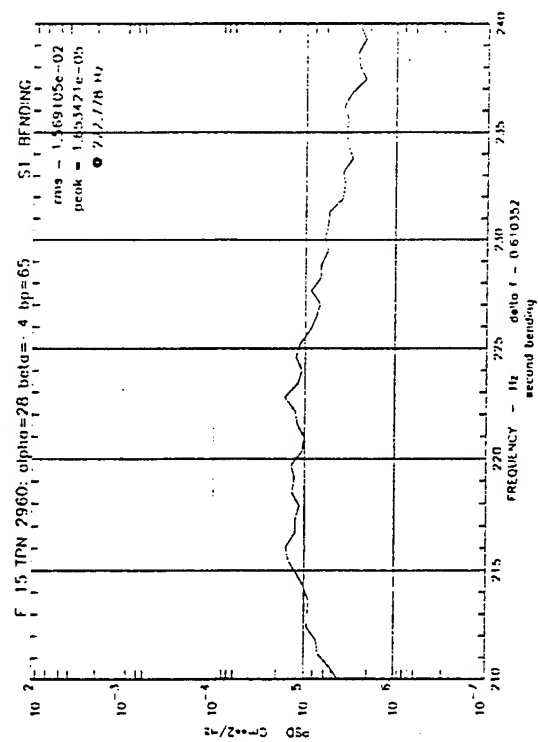
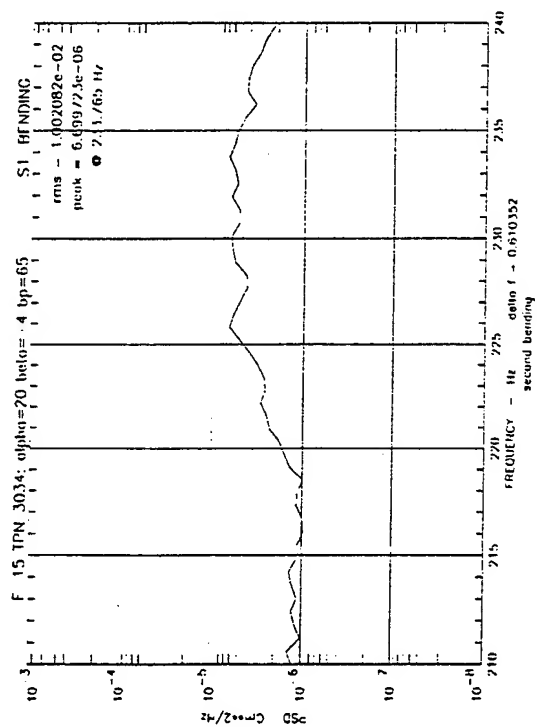










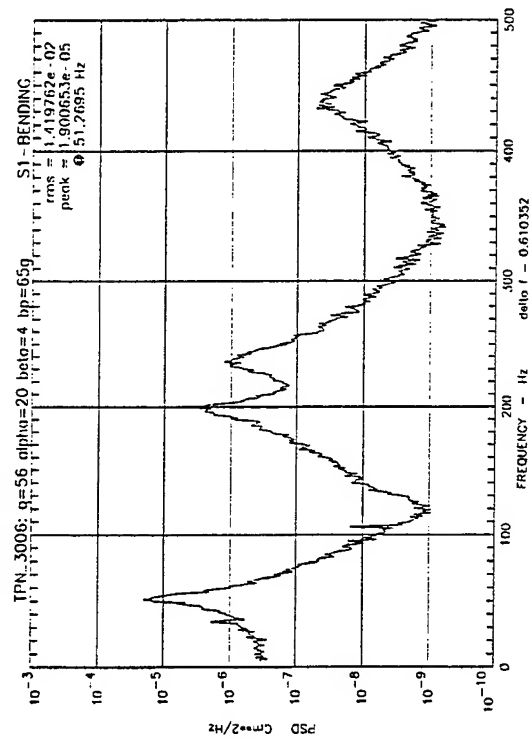


**FLEXIBLE TAIL RESPONSE  
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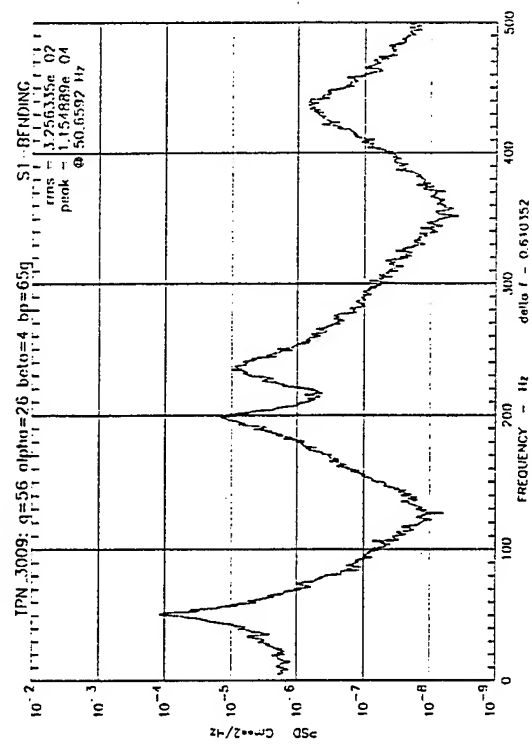
**Q= 56PSF**

**3.1.1.2 GBP = 65 PSI, BETA = 0, +4, -4 DEG, ALPHA=16....28 DEG**

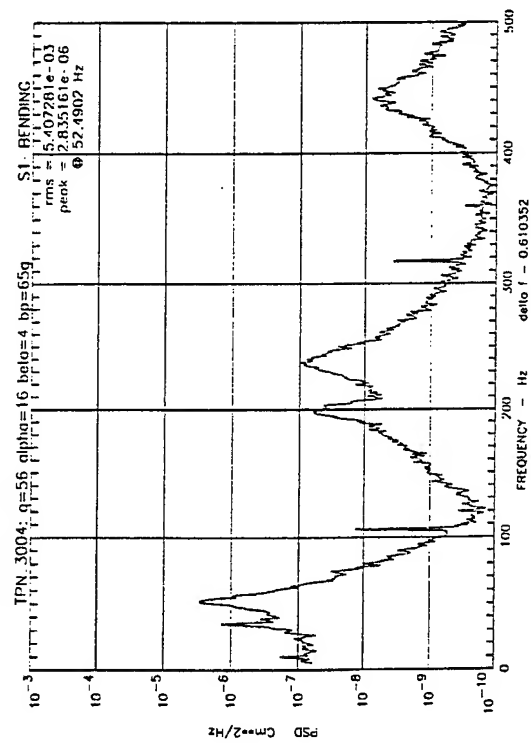
F-15 Tail Buffet Test



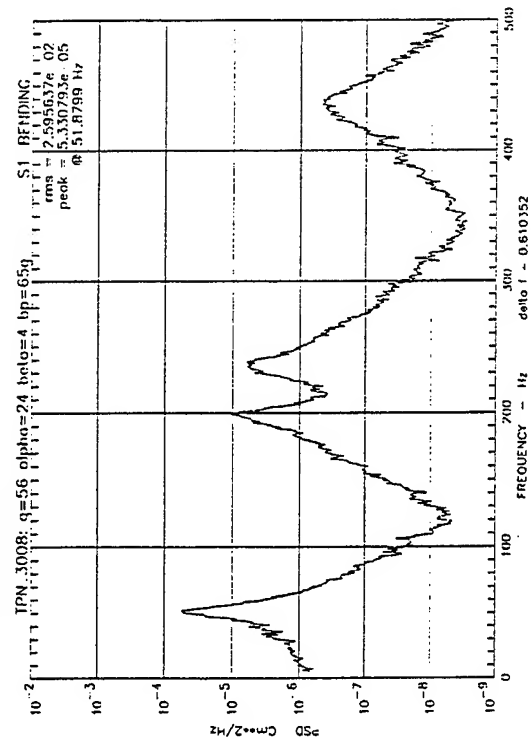
F-15 Tail Buffet Test



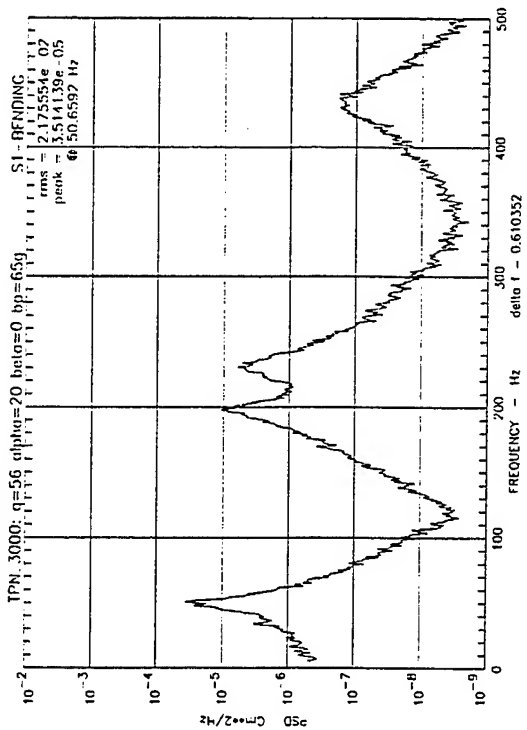
F-15 Tail Buffet Test



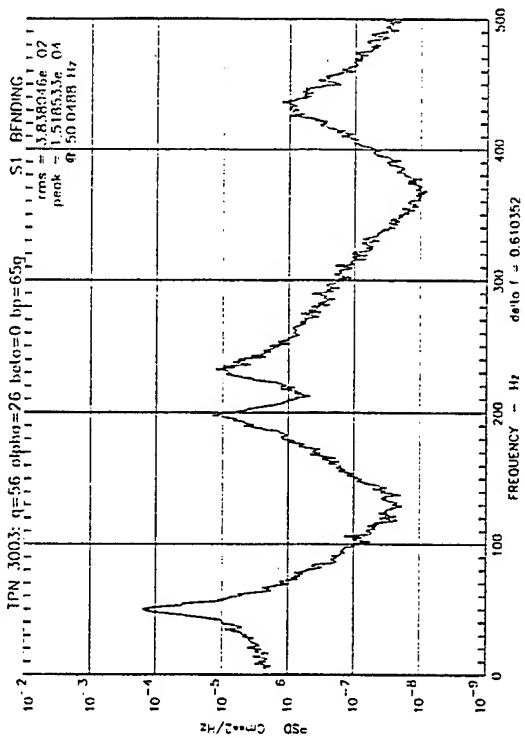
F-15 Tail Buffet Test



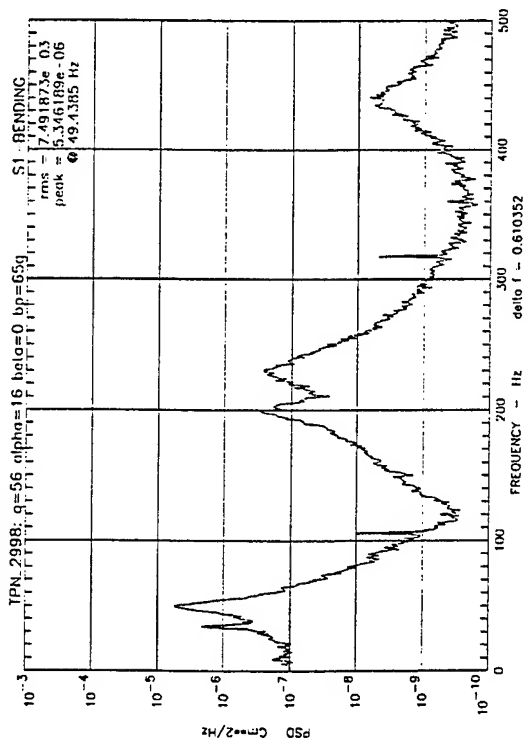
F-15 Tail Buffet Test



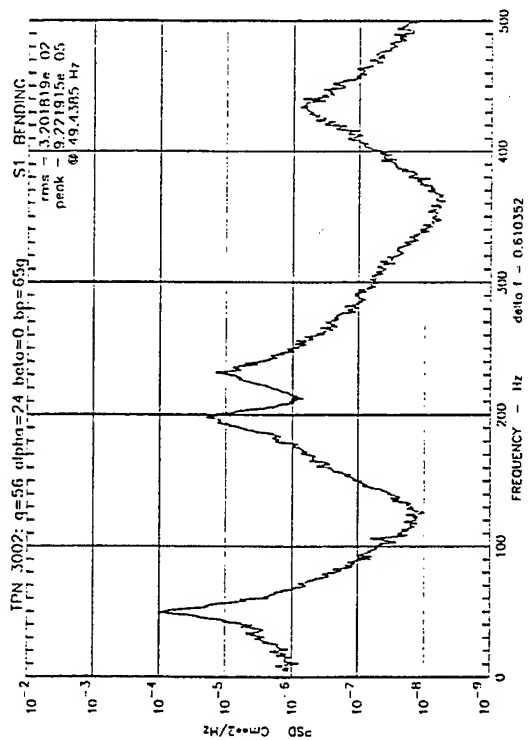
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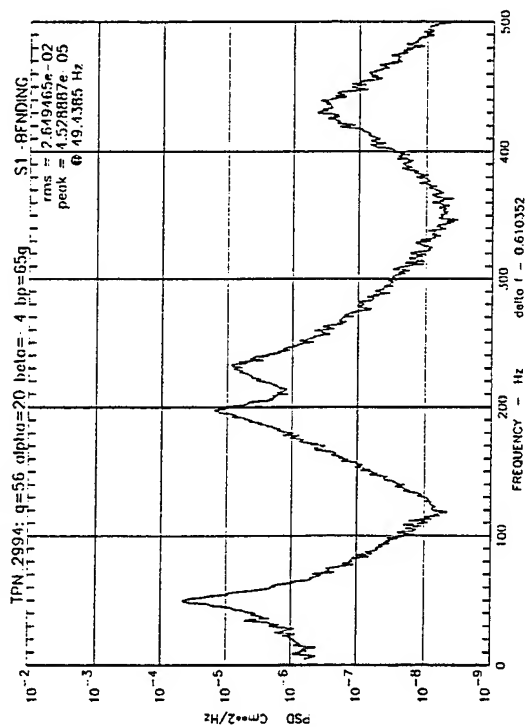
F-15 Tail Buffet Test



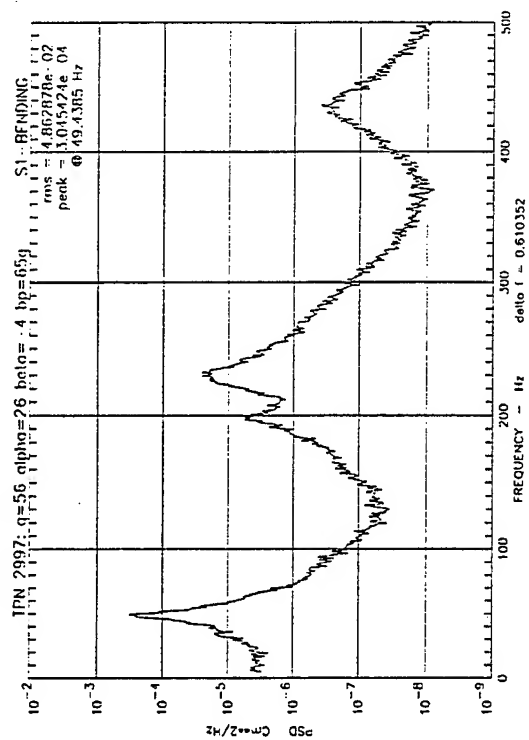
F-15 Tail Buffet Test



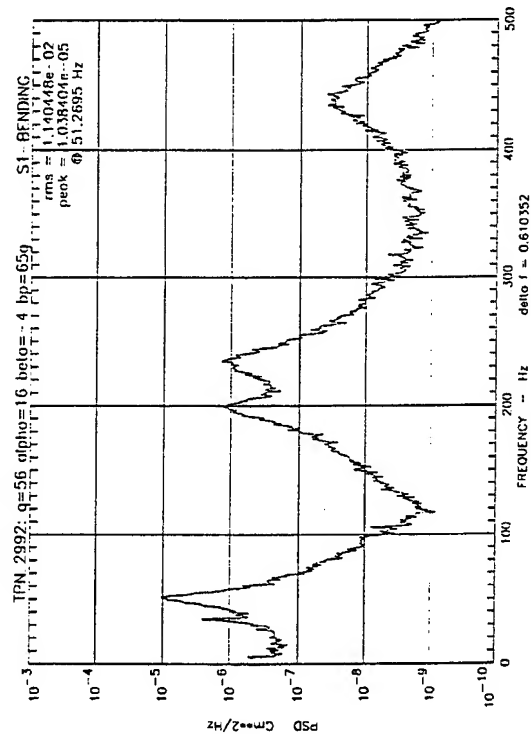
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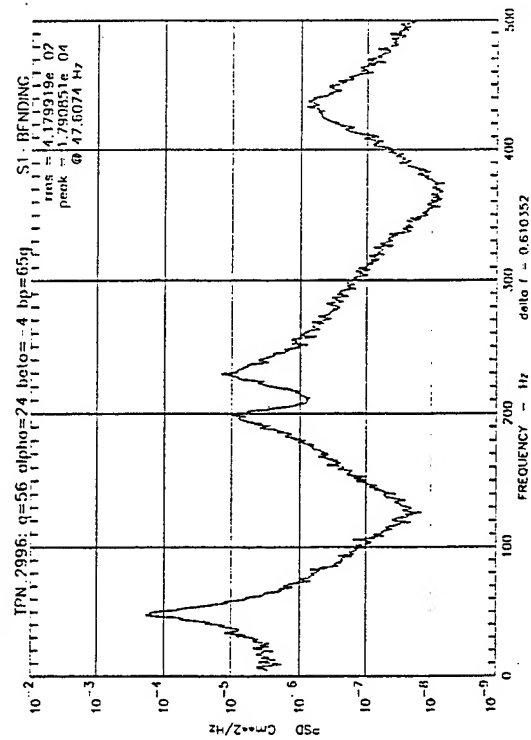
F-15 Tail Buffet Test



F-15 Tail Buffet Test

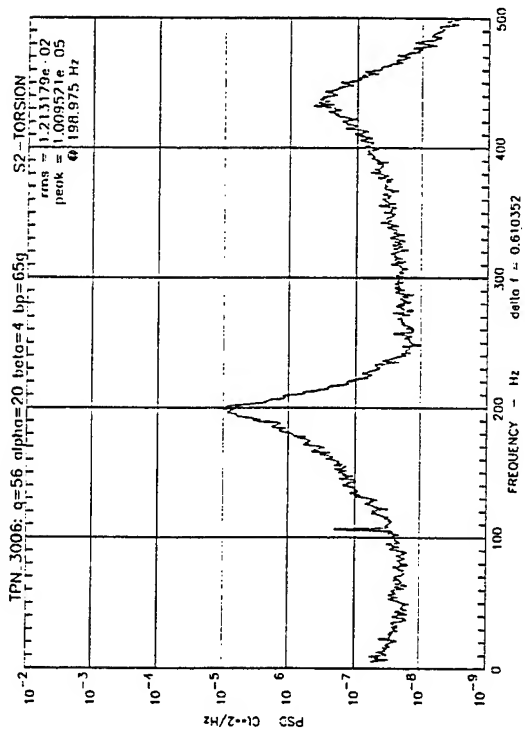


F-15 Tail Buffet Test

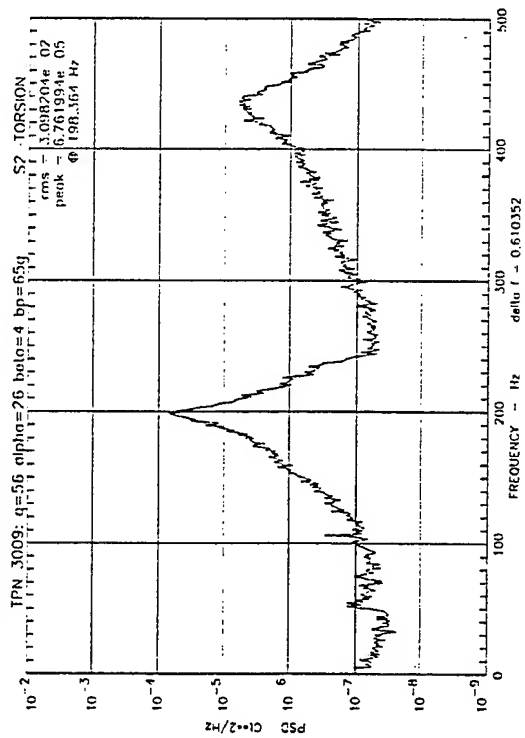




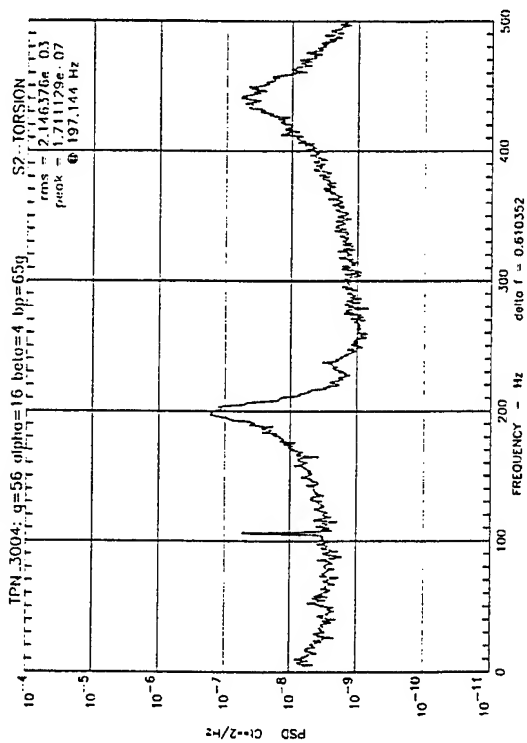
F-15 Tail Buffet Test



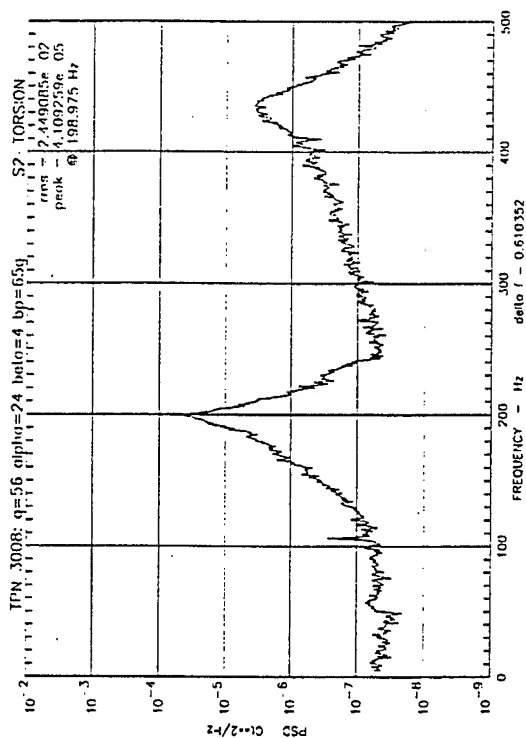
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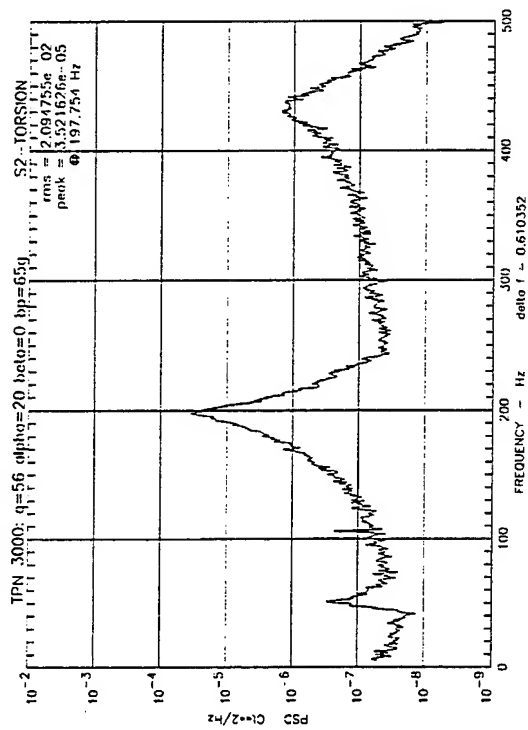
F-15 Tail Buffet Test



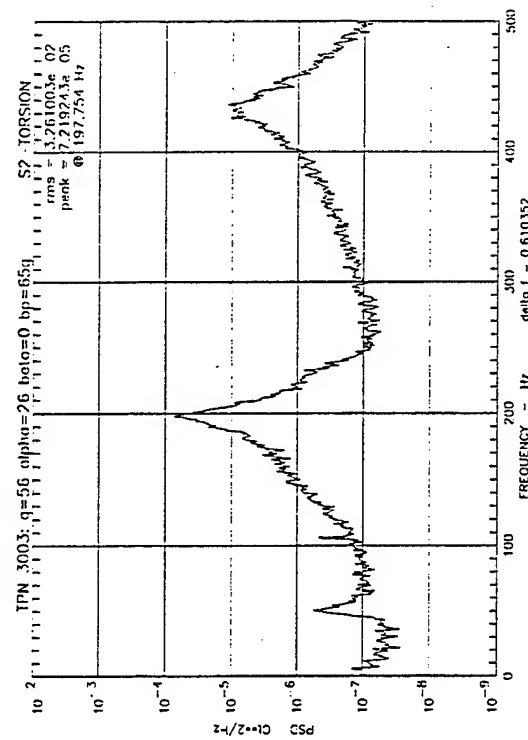
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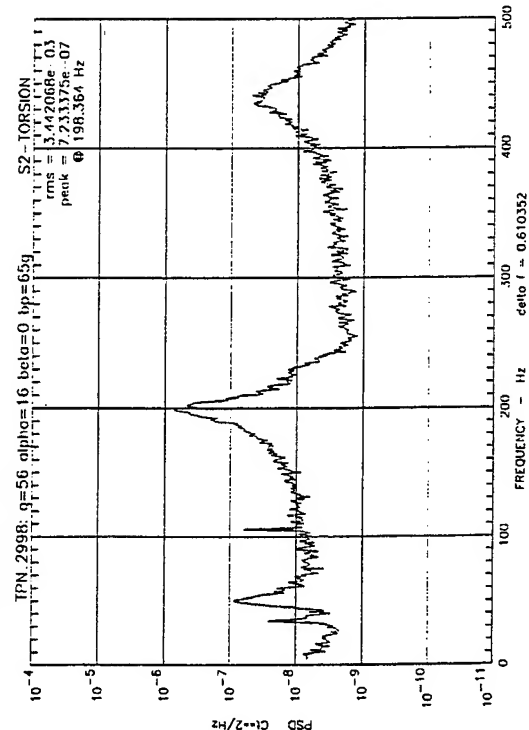
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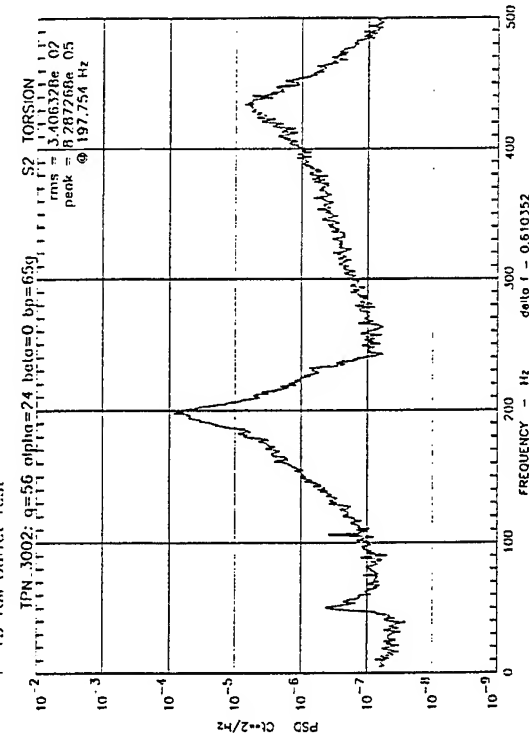
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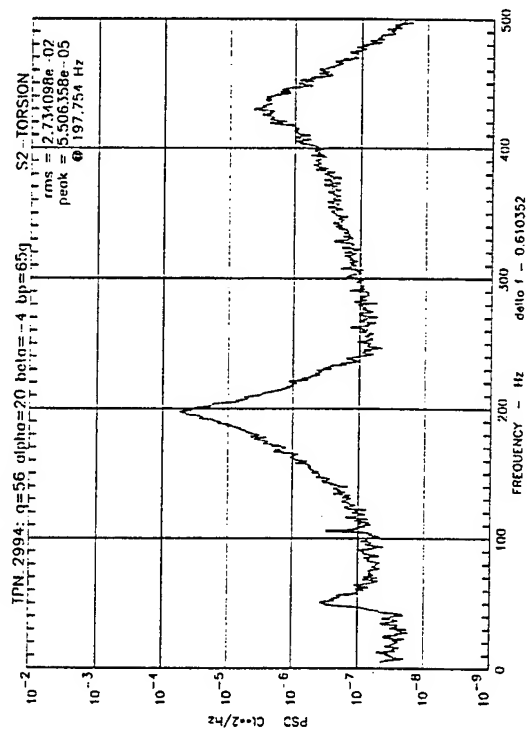
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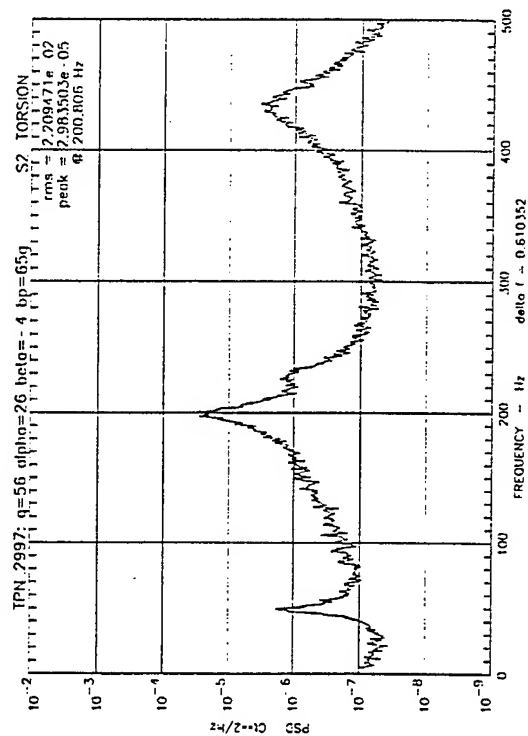
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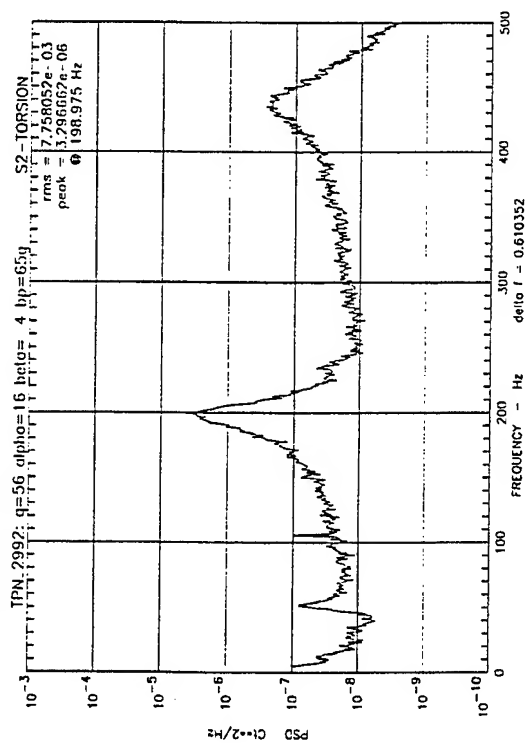
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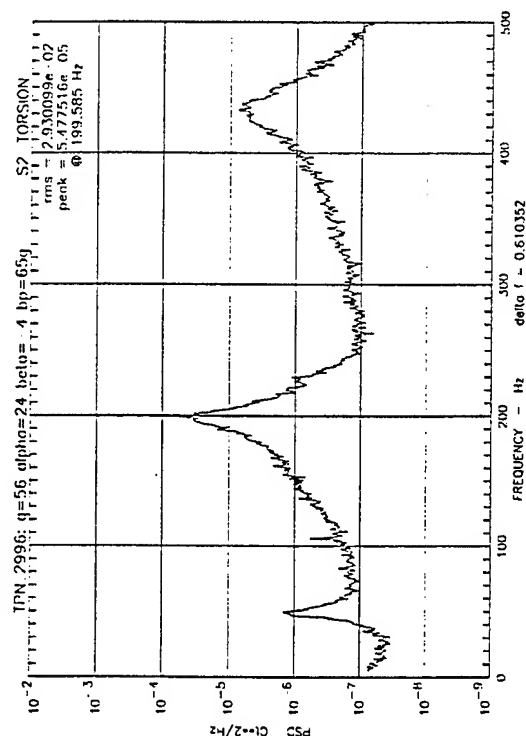
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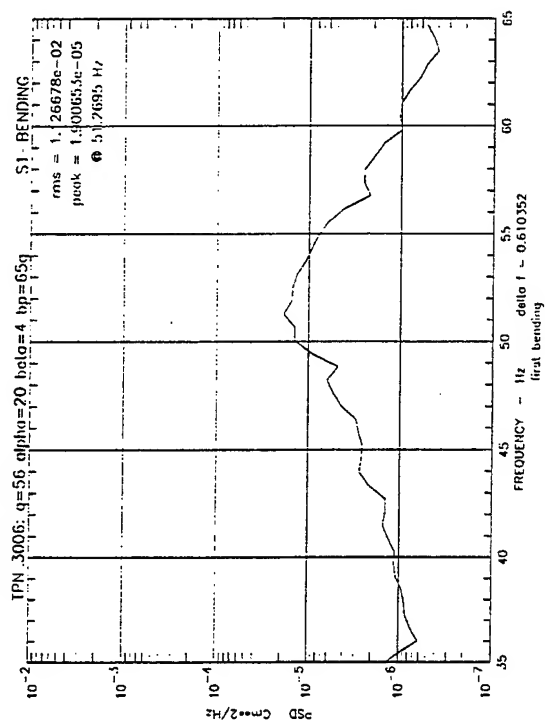
F-15 Tail Buffet Test



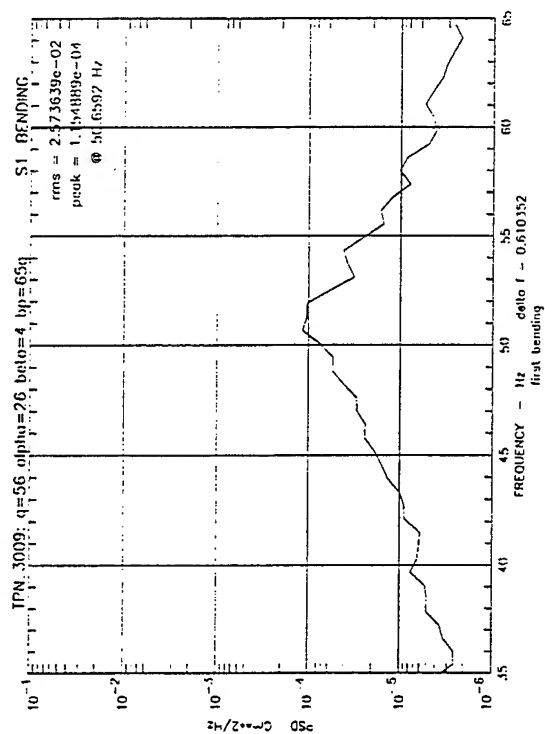
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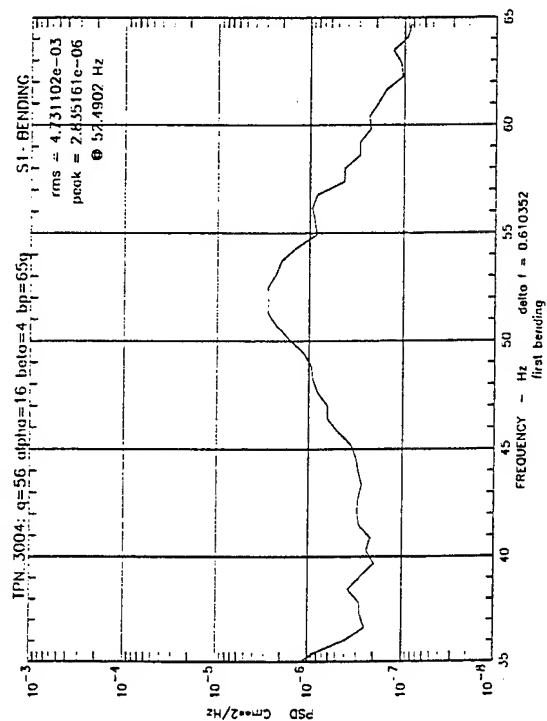
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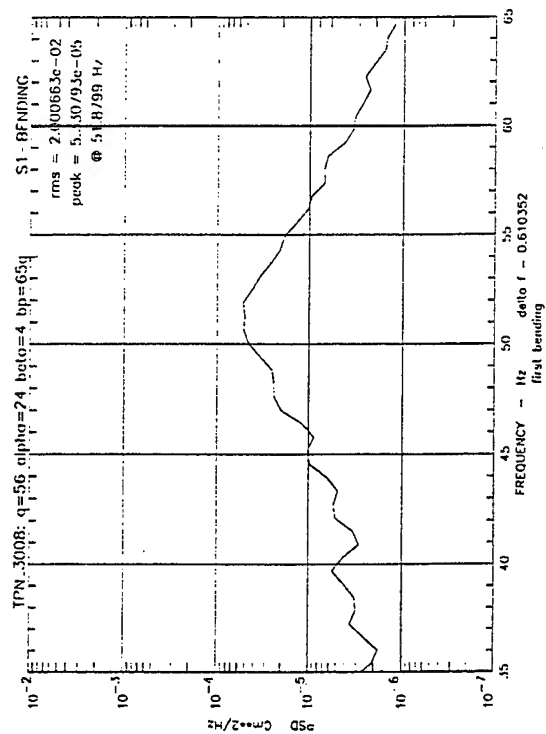
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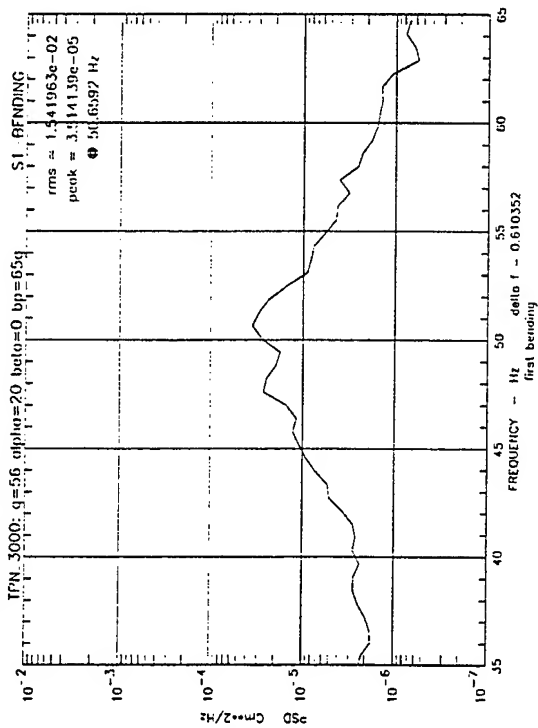
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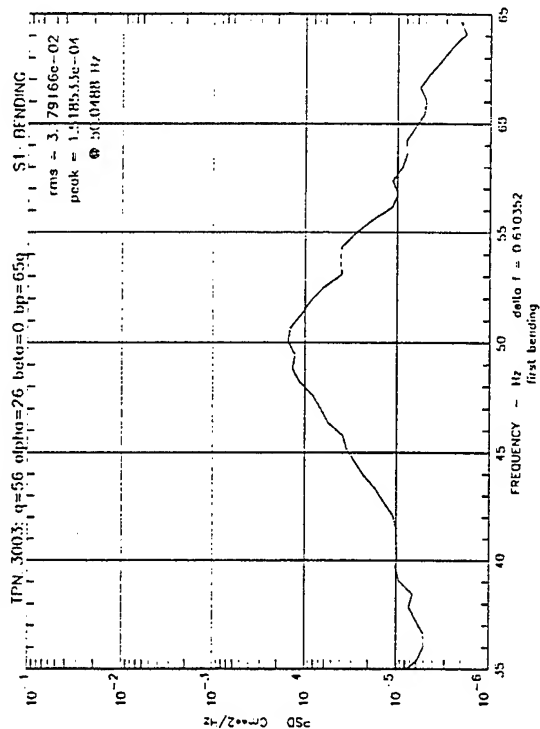
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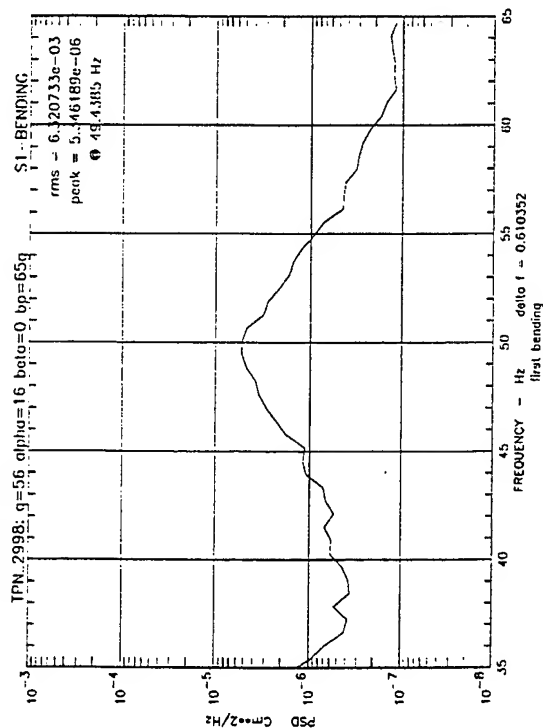
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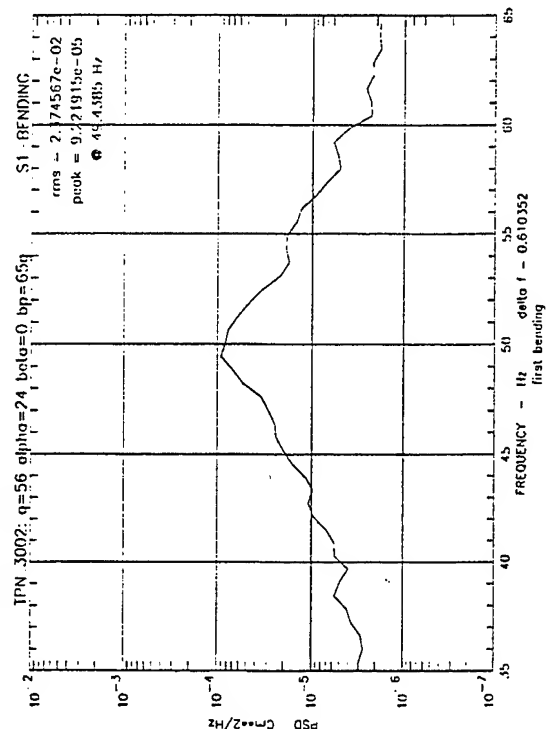
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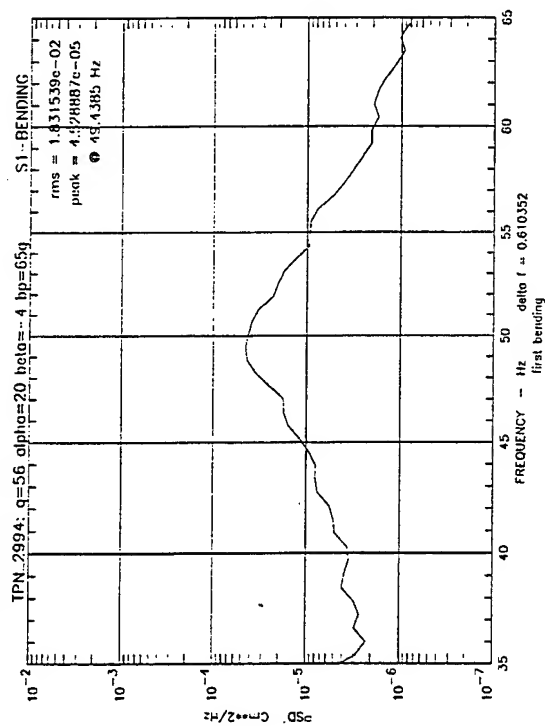
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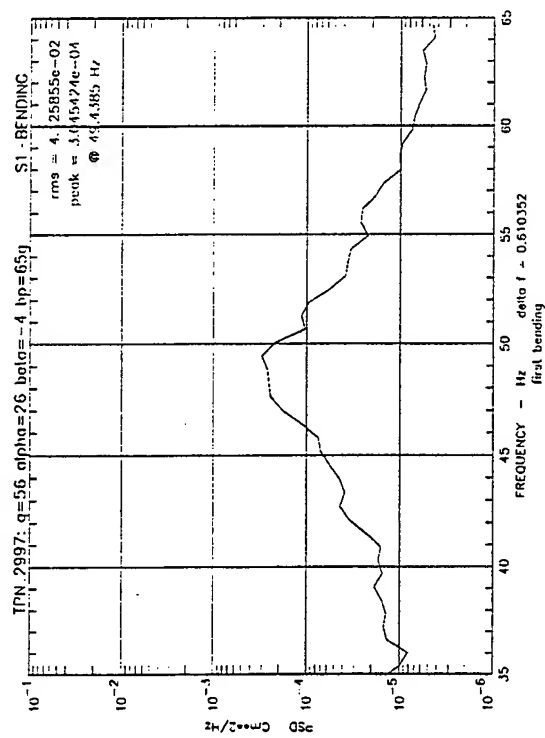
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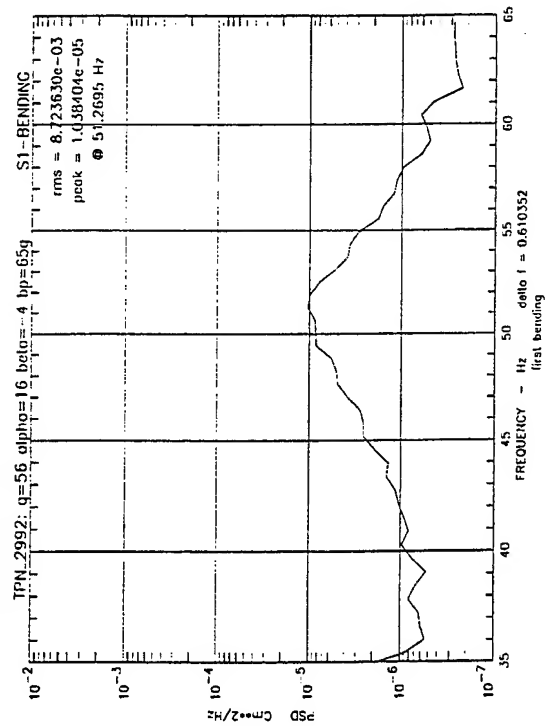
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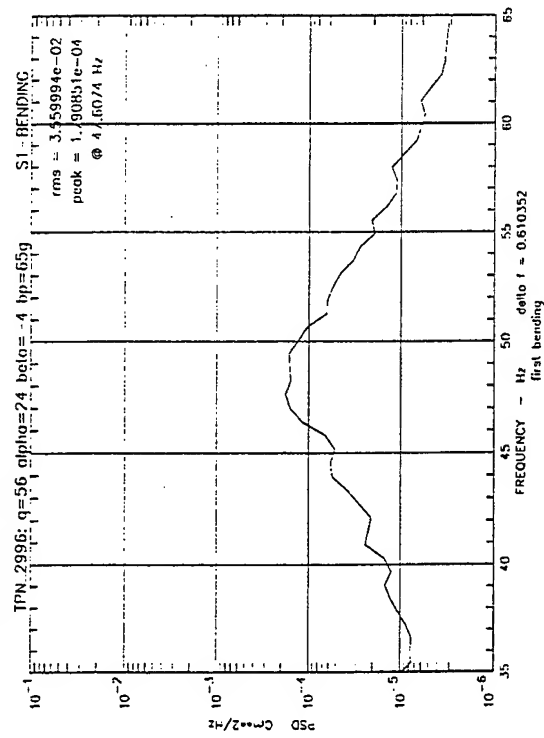
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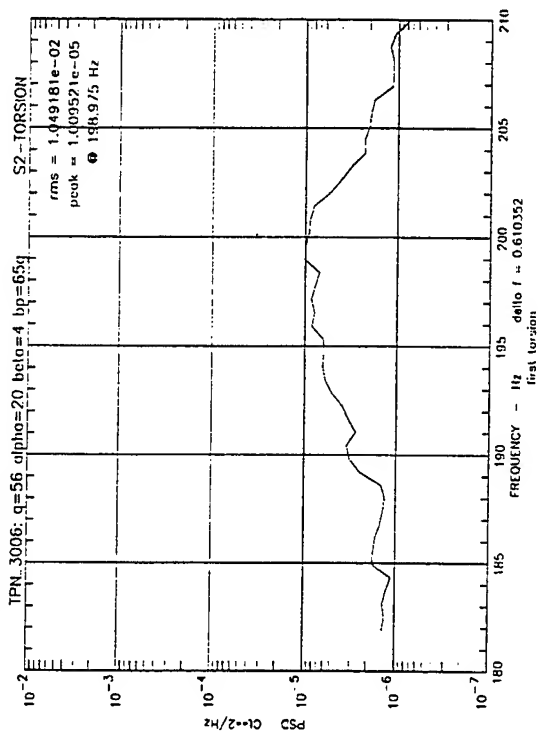
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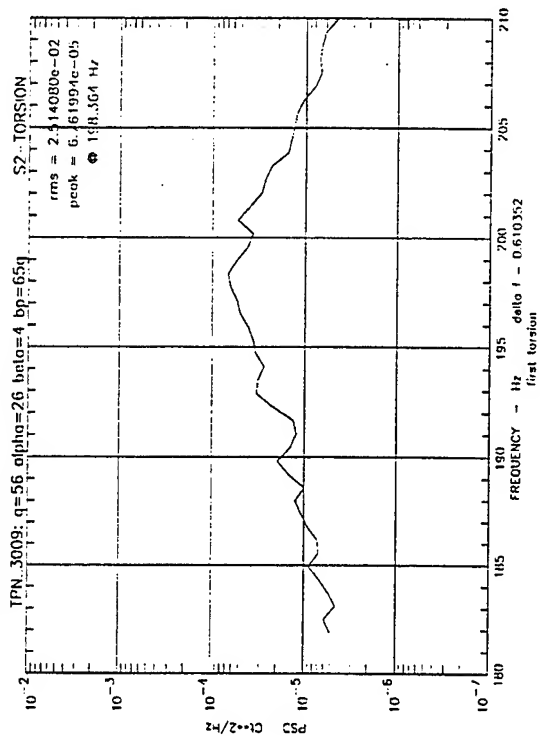
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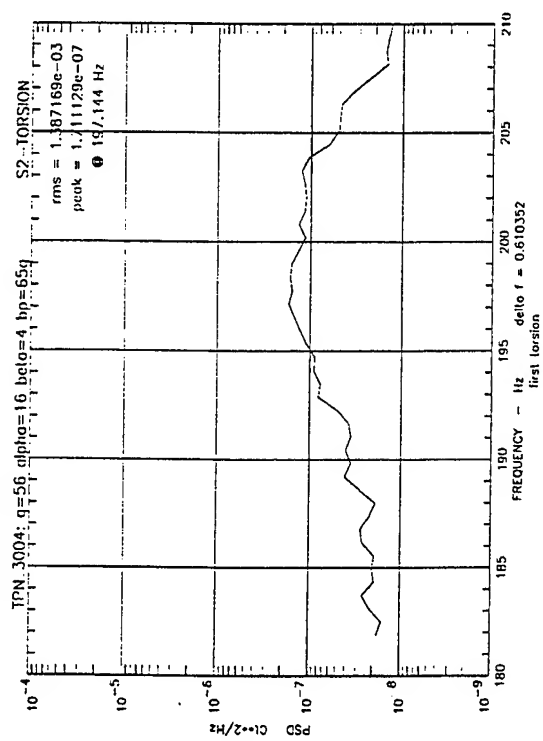
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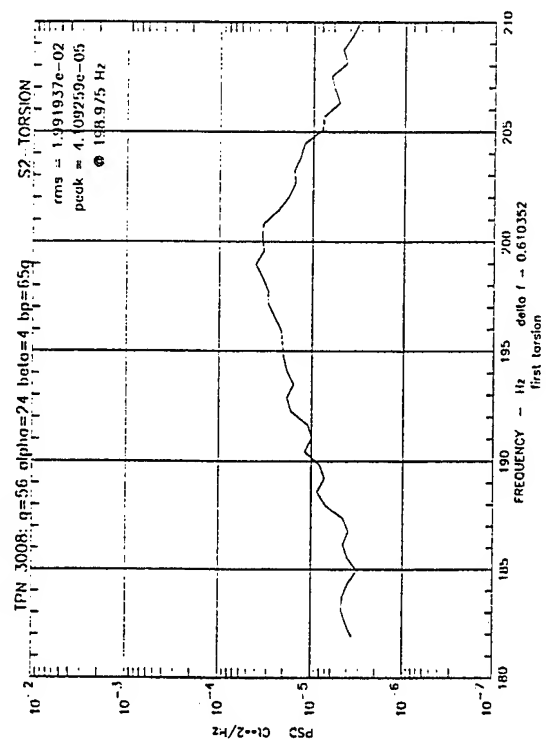
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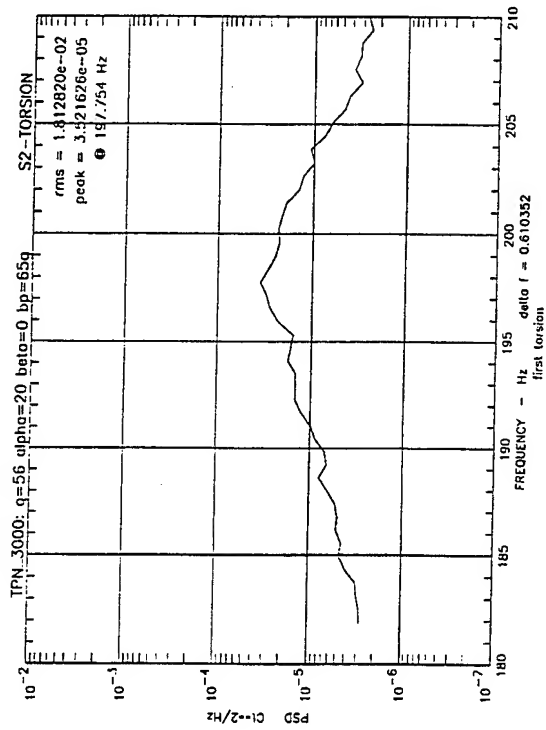
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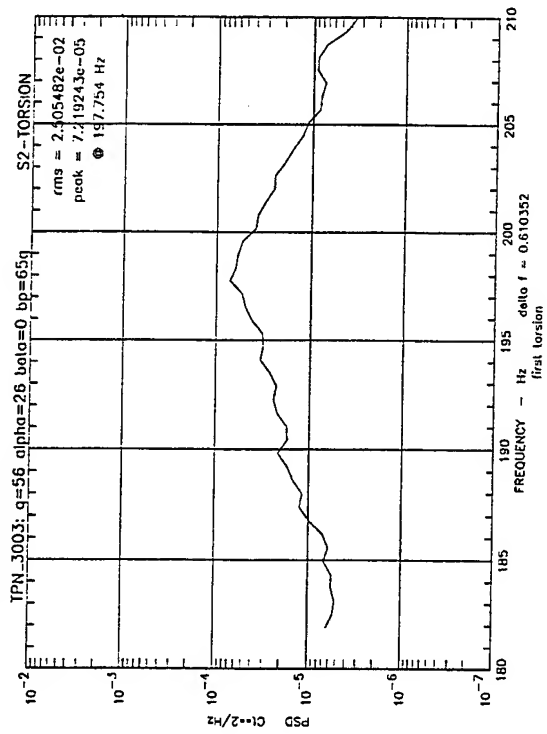
F-15 Tail Buffet Test



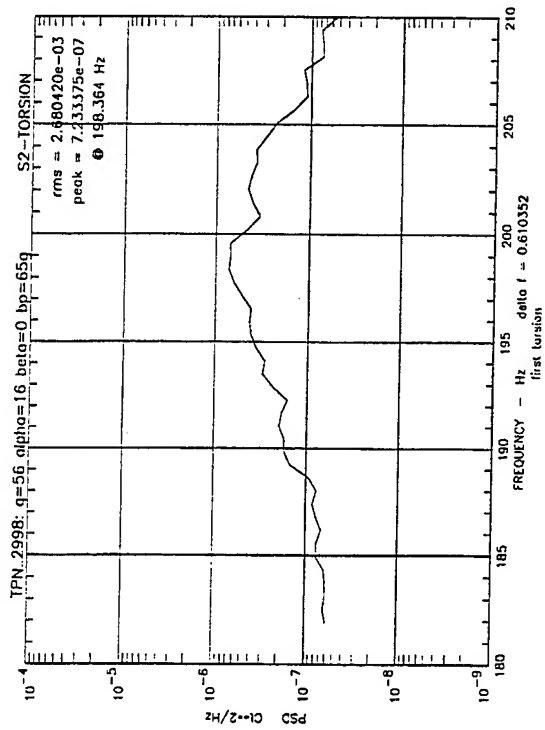
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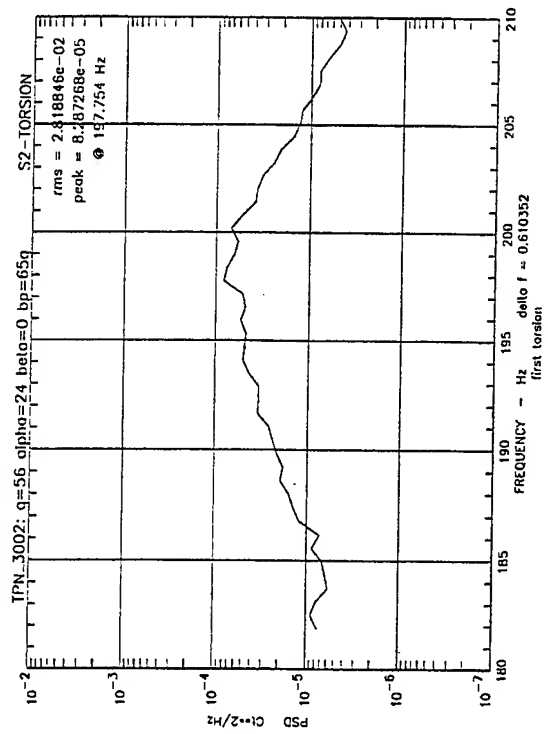
F-15 Tail Buffet Test



F-15 Tail Buffet Test

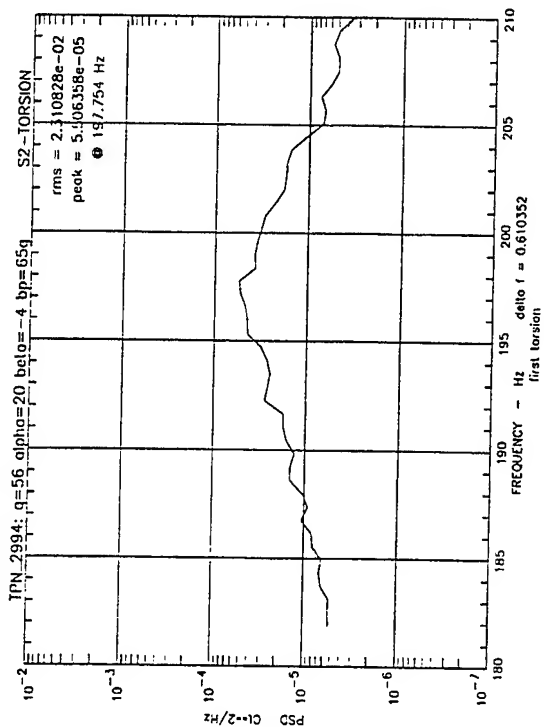


F-15 Tail Buffet Test

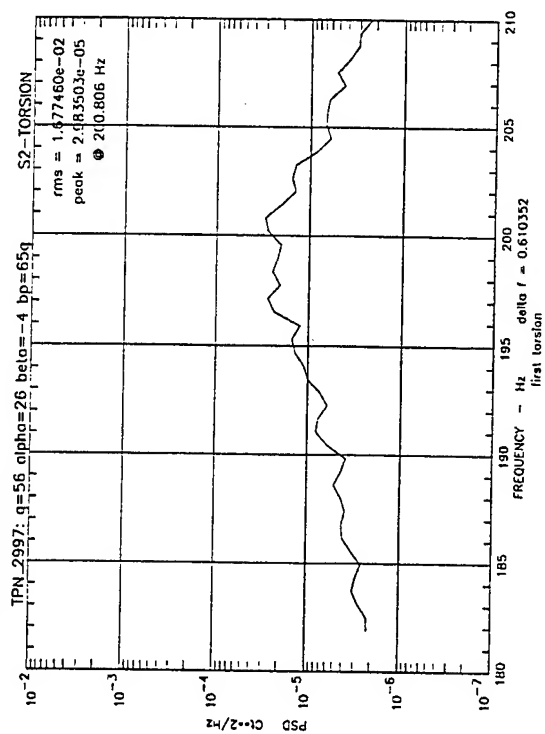




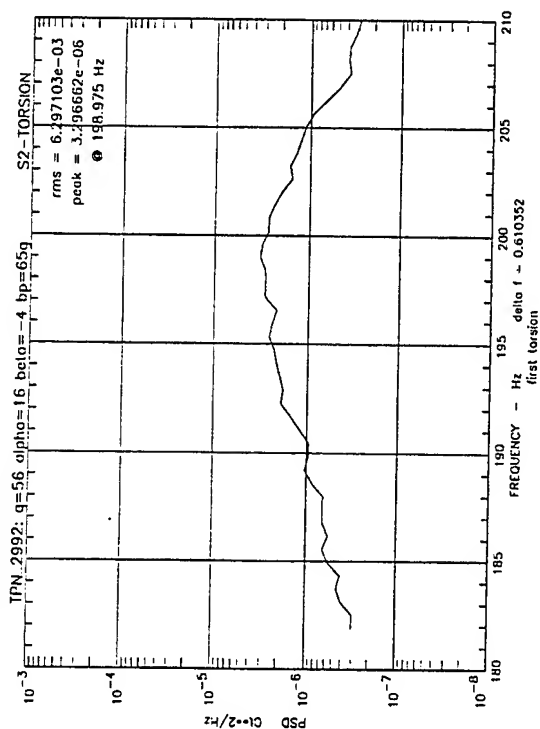
# F-15 Tail Buffet Test



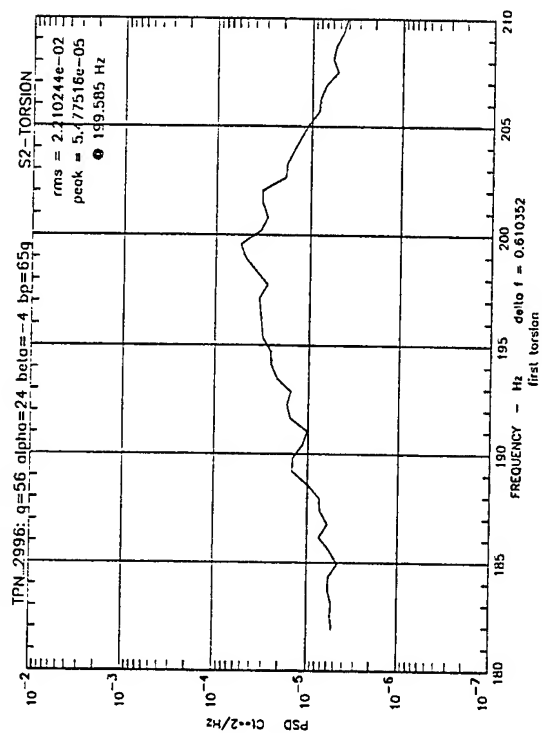
# F-15 Tail Buffet Test



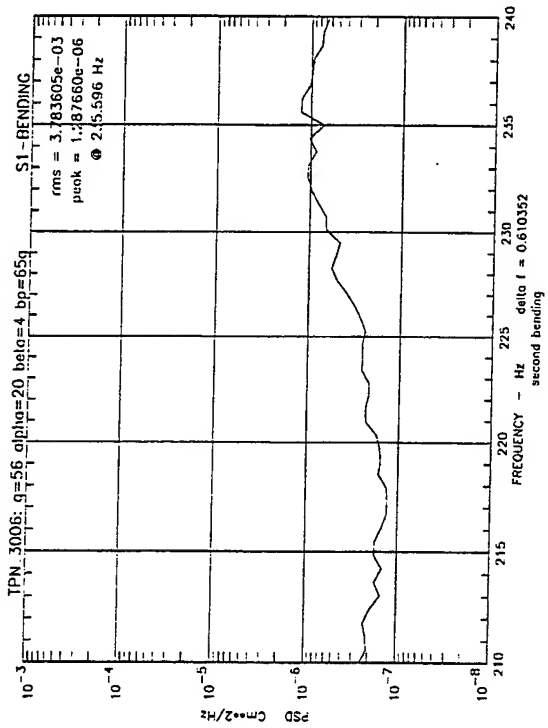
# F-15 Tail Buffet Test



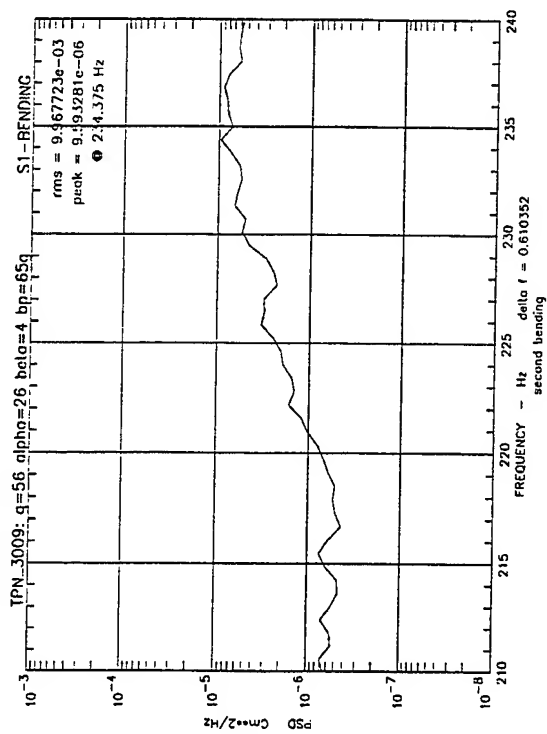
# F-15 Tail Buffet Test



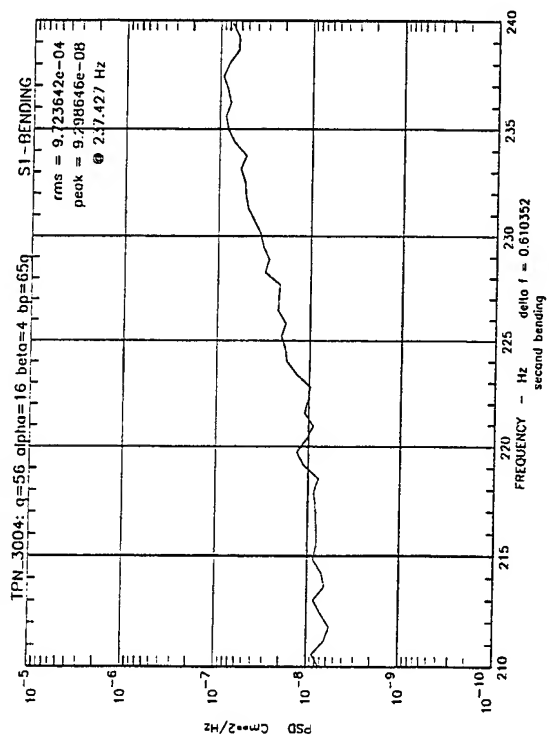
F-15 Tail Buffet Test



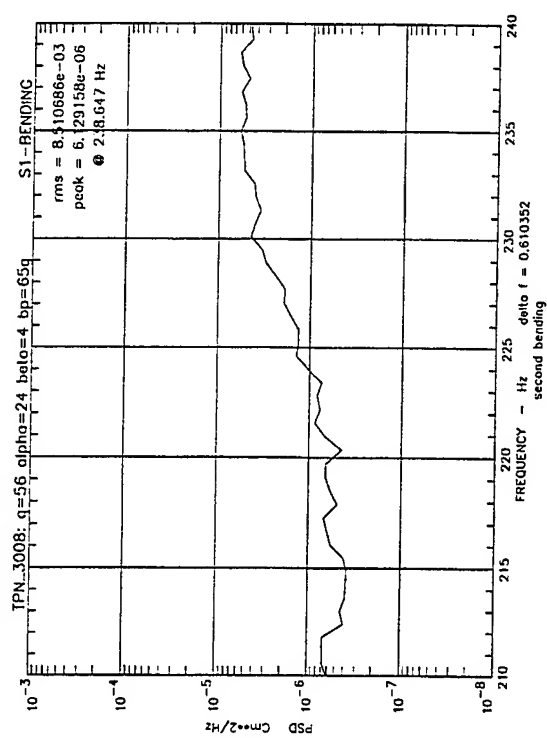
F-15 Tail Buffet Test



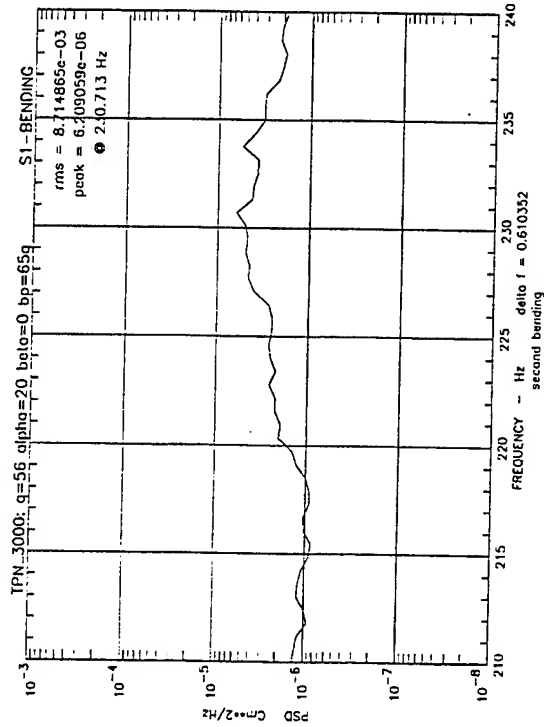
F-15 Tail Buffet Test



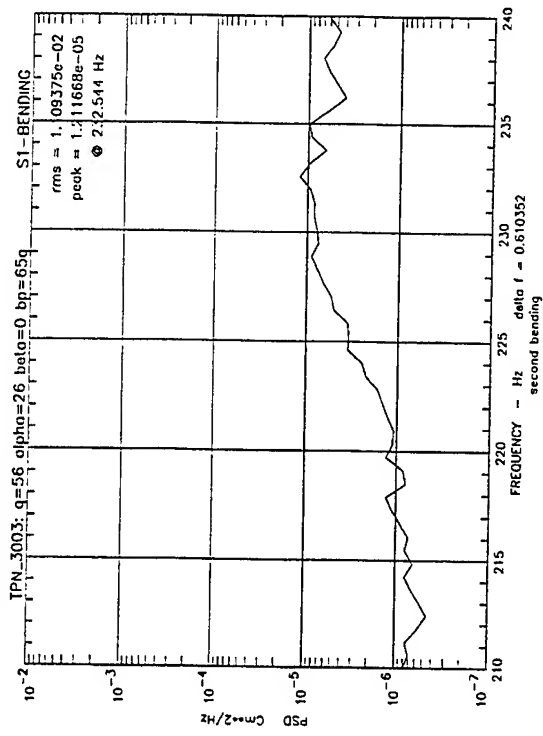
F-15 Tail Buffet Test



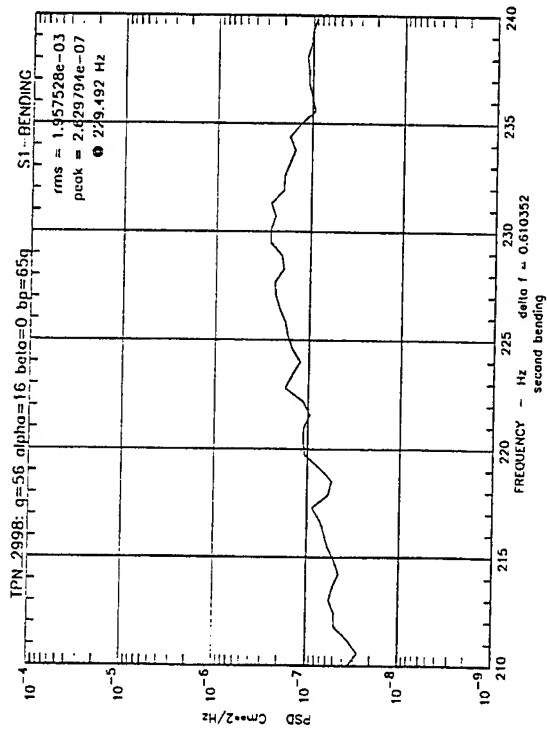
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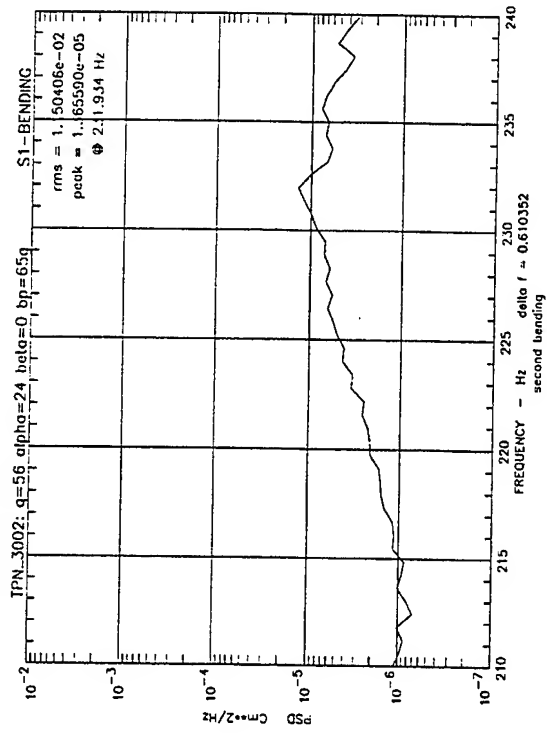
F-15 Tail Buffet Test



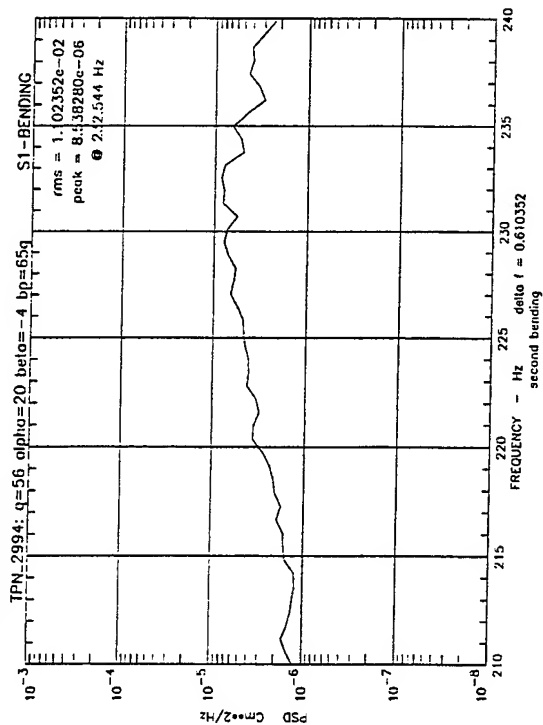
F-15 Tail Buffet Test



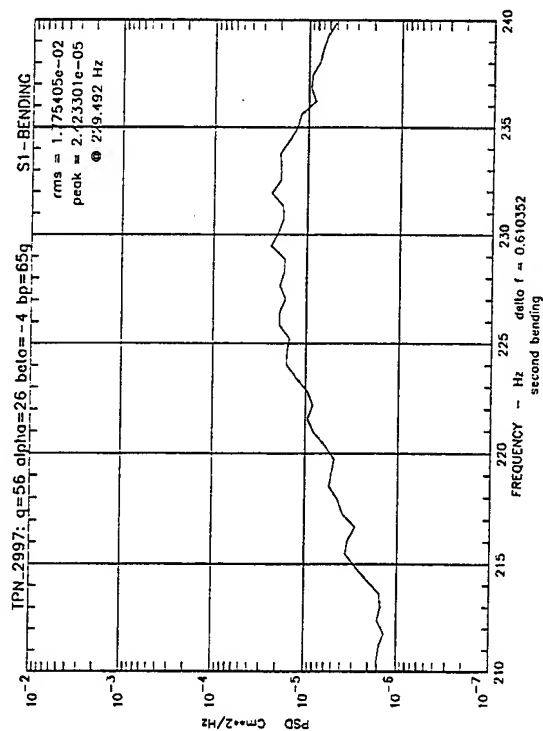
F-15 Tail Buffet Test



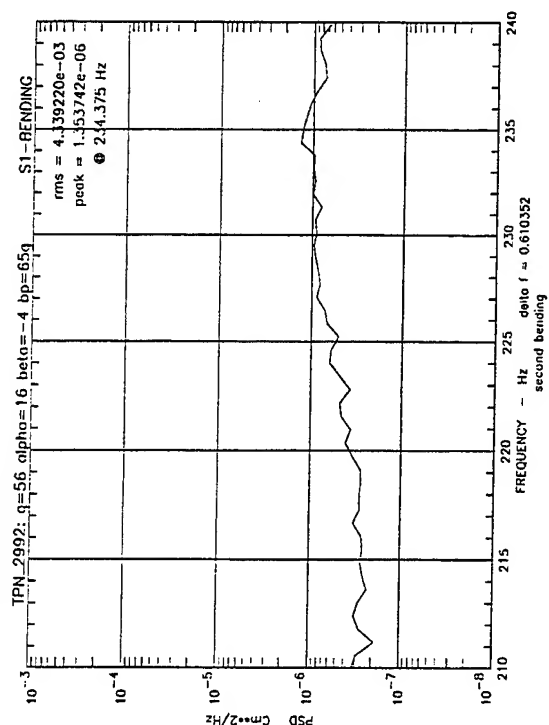
F-15 Tail Buffet Test



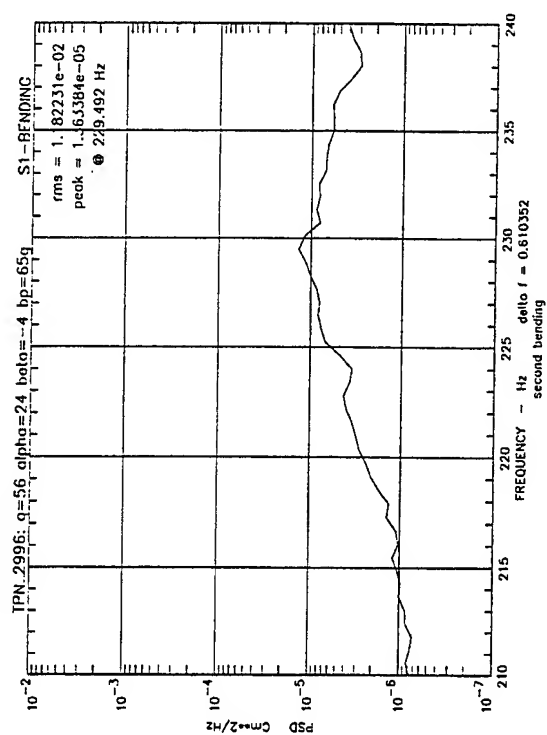
F-15 Tail Buffet Test



F-15 Tail Buffet Test



F-15 Tail Buffet Test

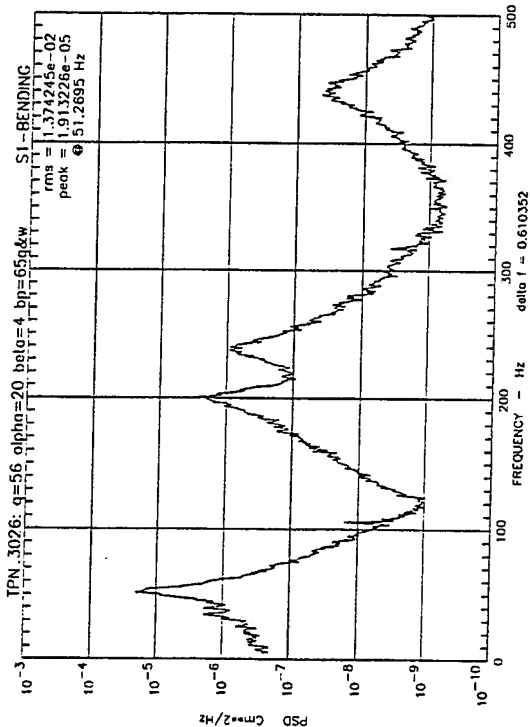


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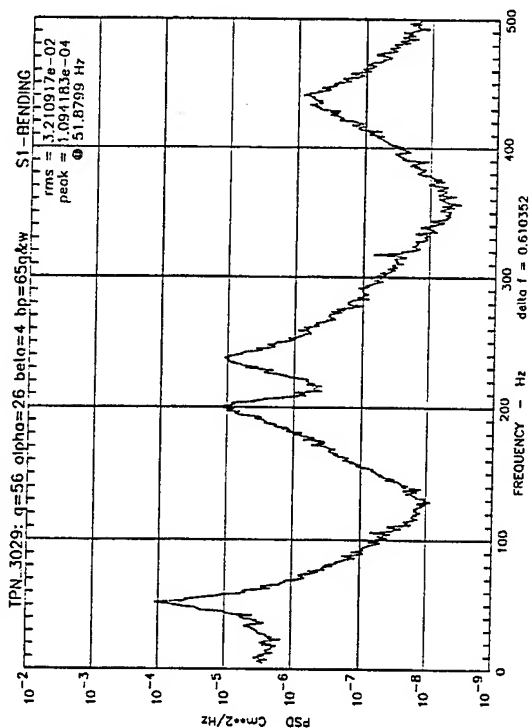
**Q= 56PSF**

**3.1.1.3 GBP = 65PSI, WBP = 65 PSI, BETA = 0, +4, -4 DEG, ALPHA=16....28 DEG**

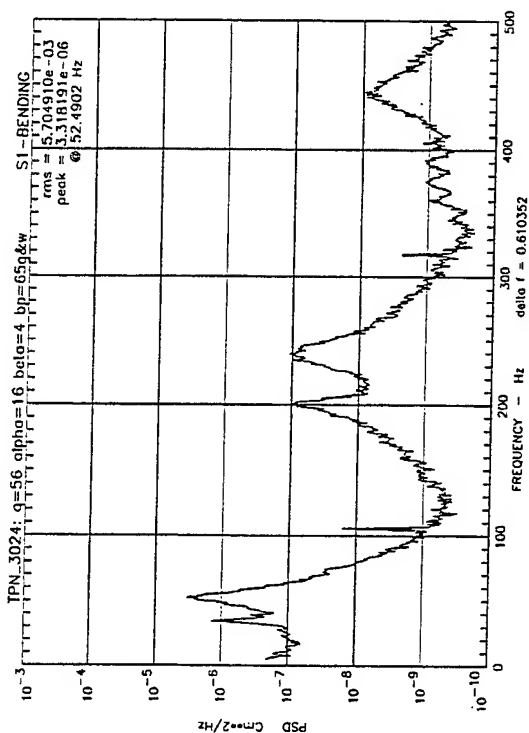
F-15 Tail Buffet Test



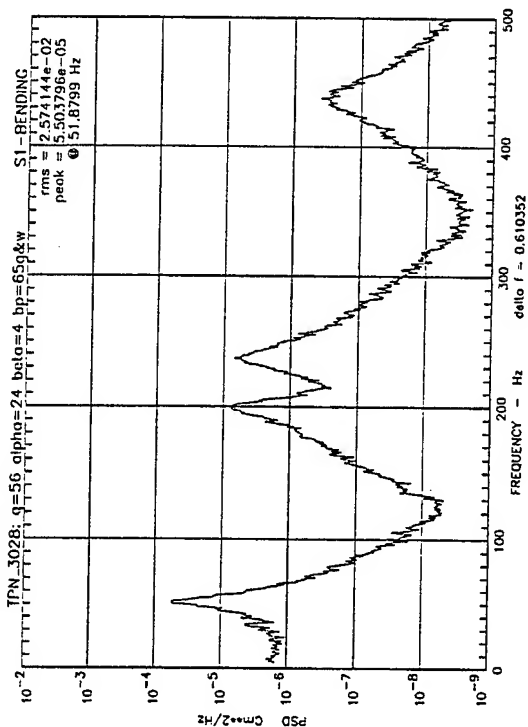
F-15 Tail Buffet Test



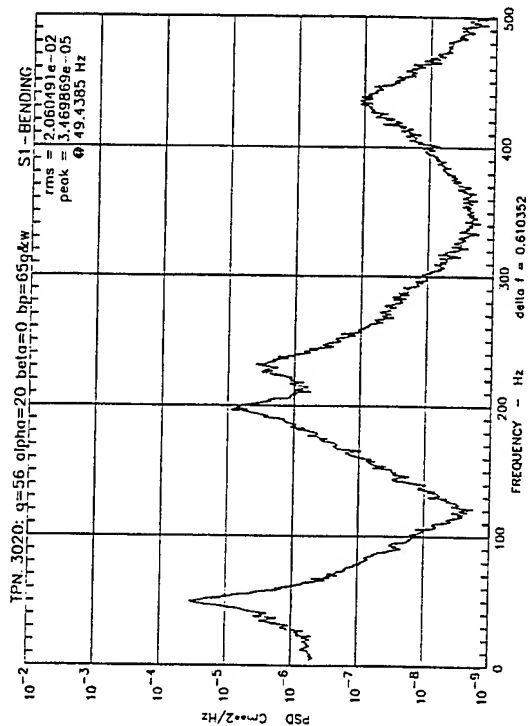
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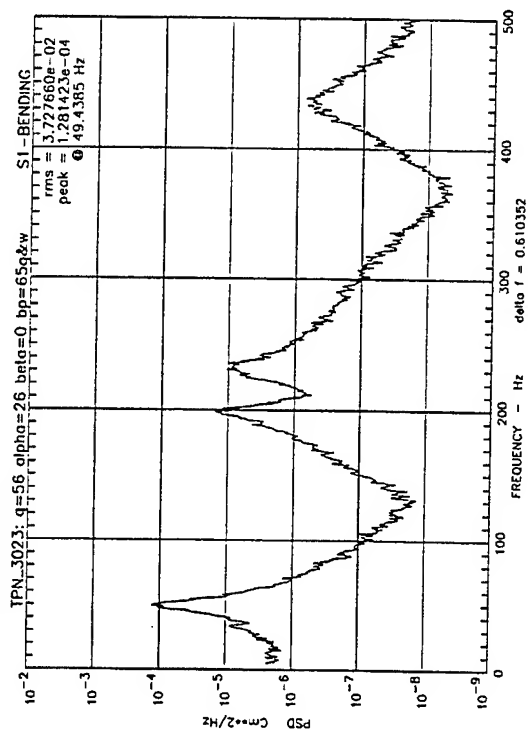
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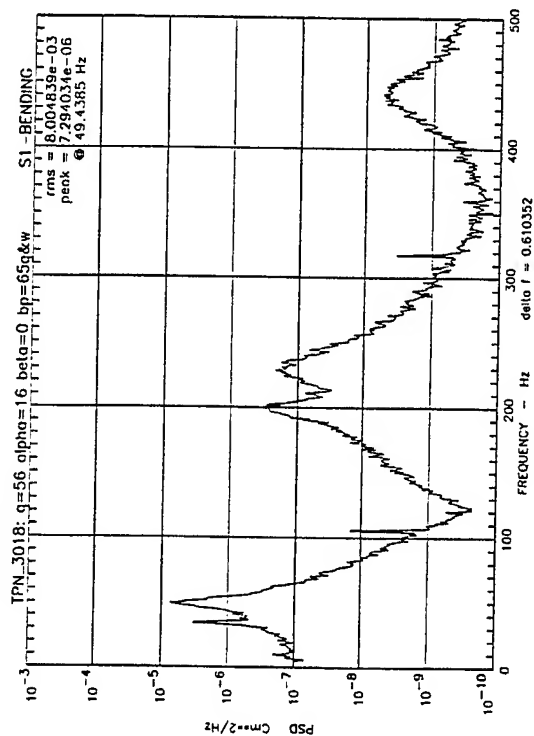
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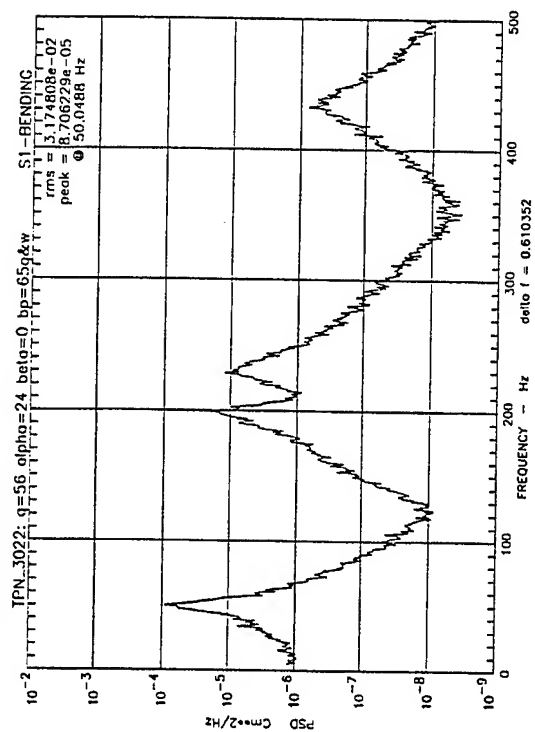
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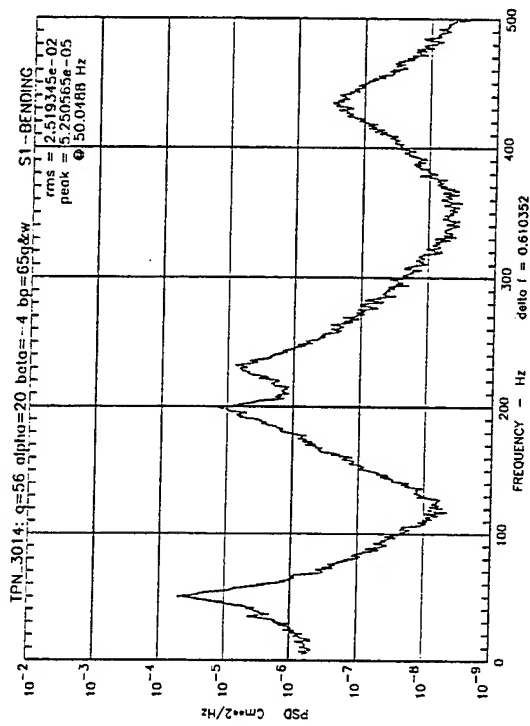
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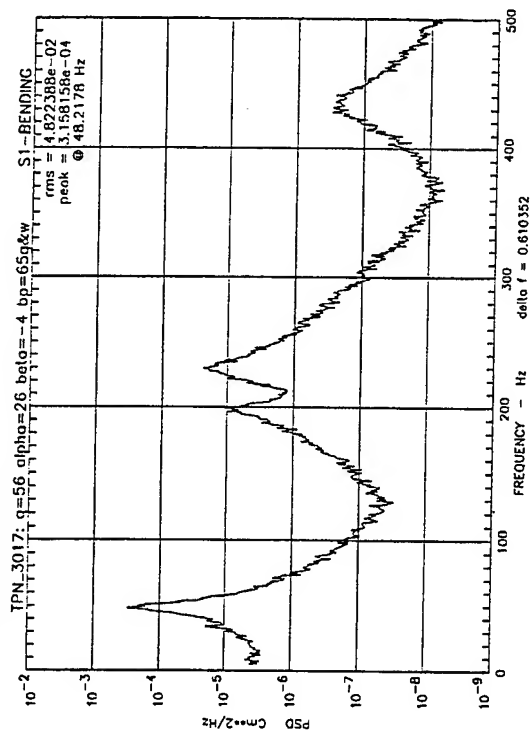
F-15 Tail Buffet Test



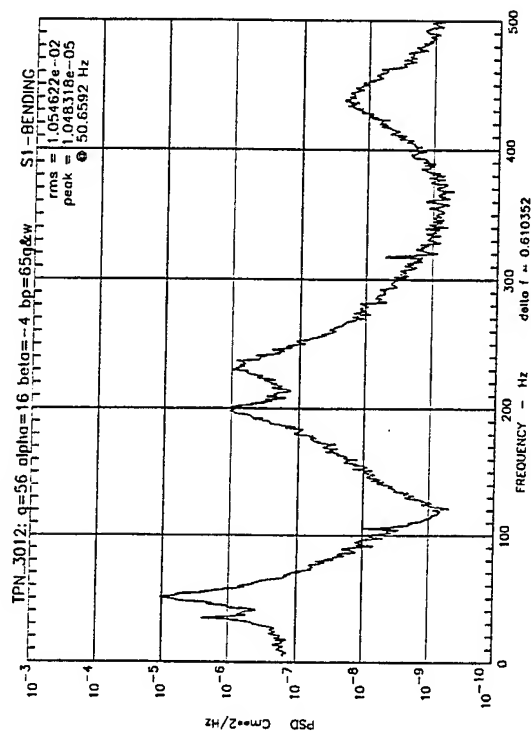
F-15 Tail Buffet Test



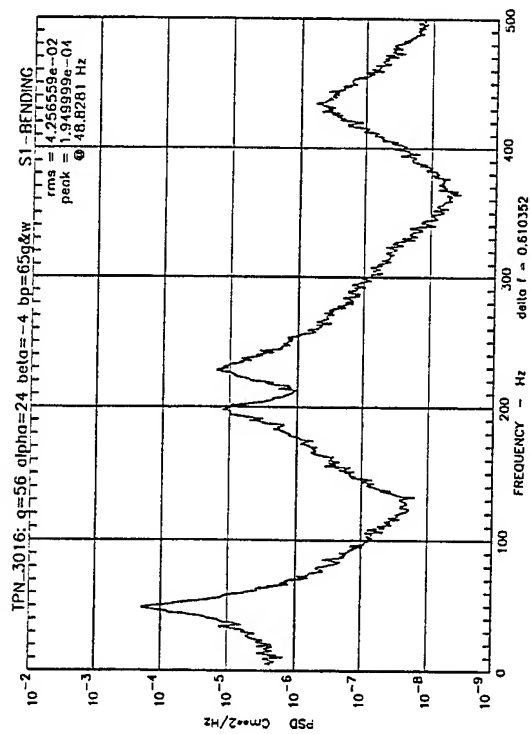
F-15 Tail Buffet Test



F-15 Tail Buffet Test

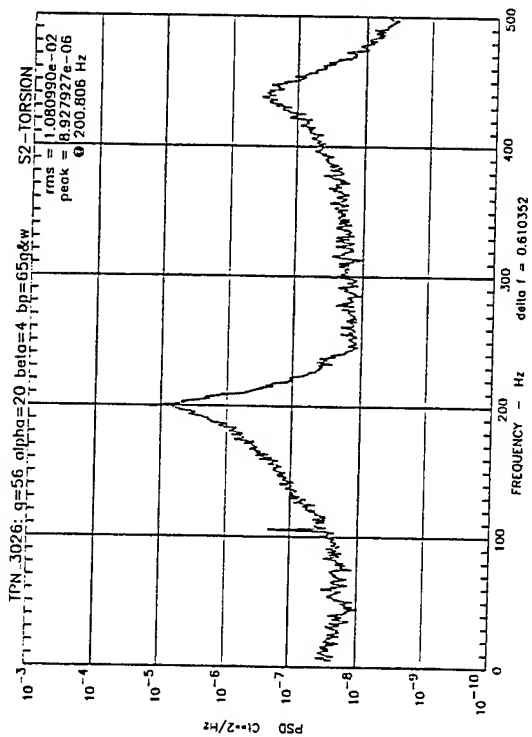


F-15 Tail Buffet Test

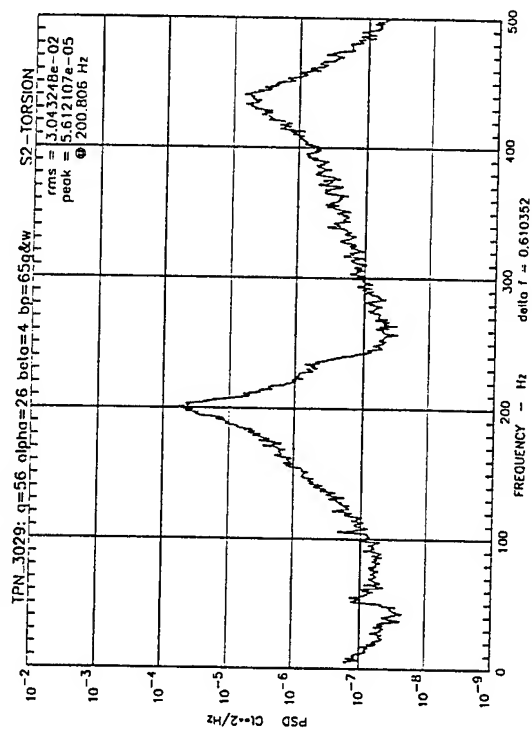




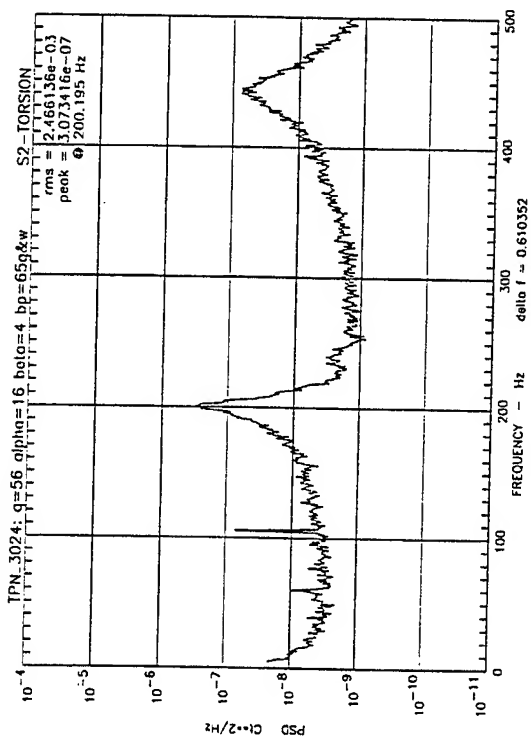
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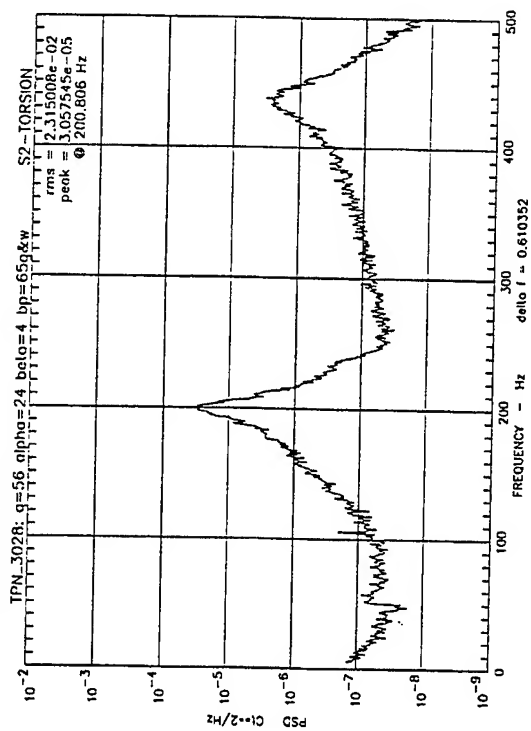
F-15 Tail Buffet Test



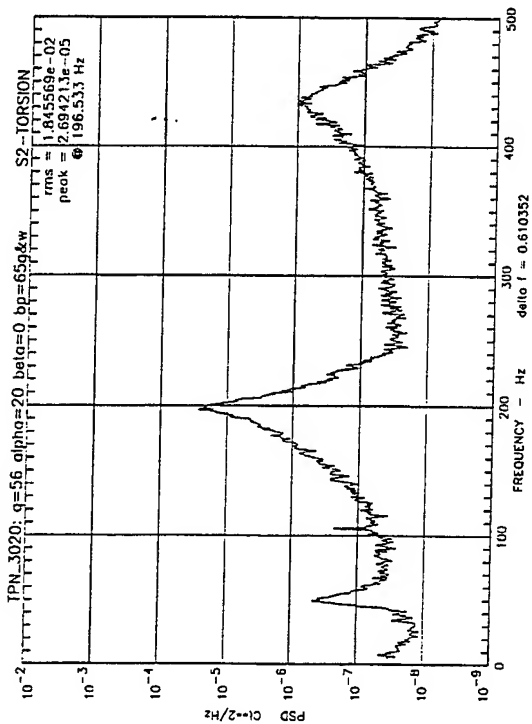
F-15 Tail Buffet Test



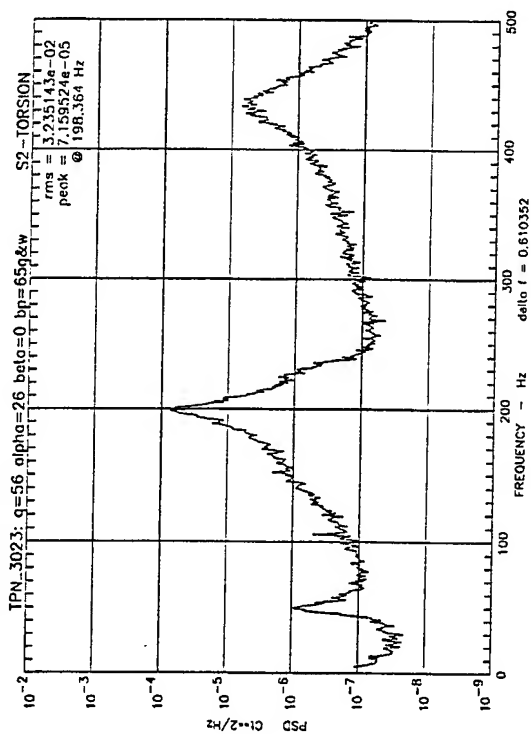
F-15 Tail Buffet Test



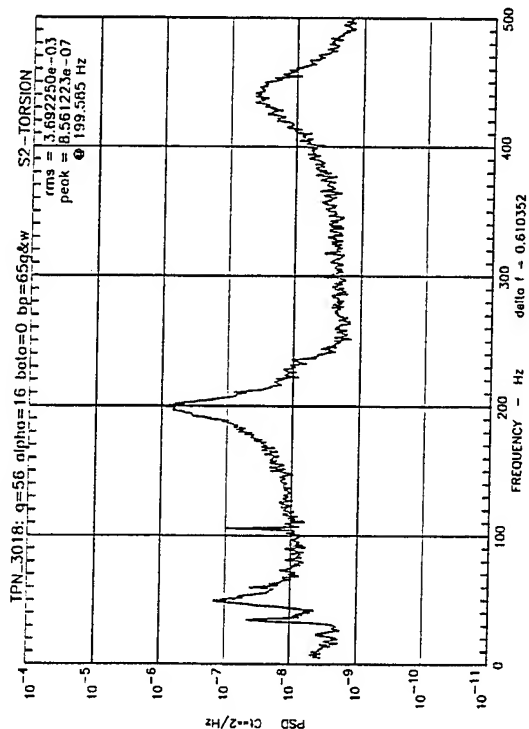
F-15 Tail Buffet Test



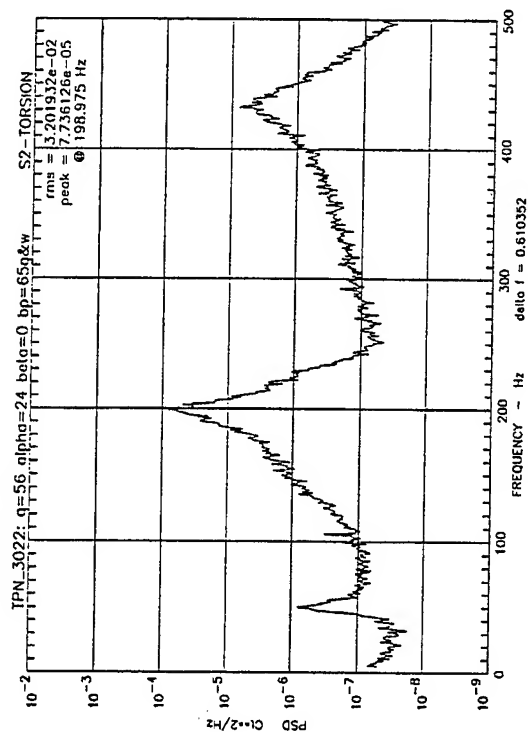
F-15 Tail Buffet Test



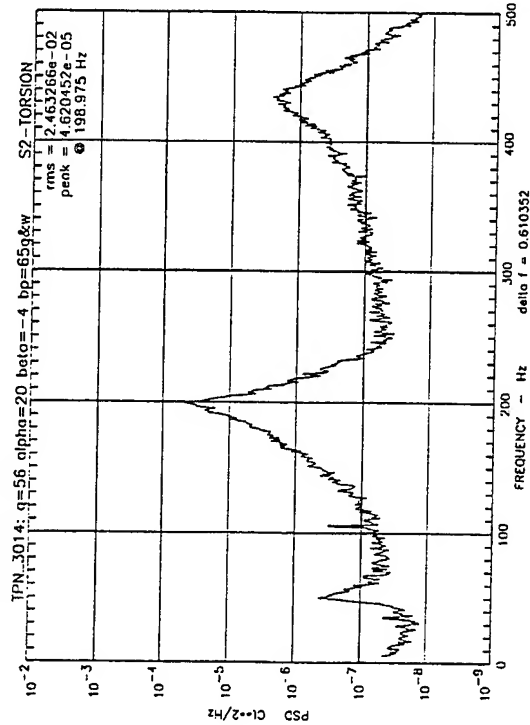
F-15 Tail Buffet Test



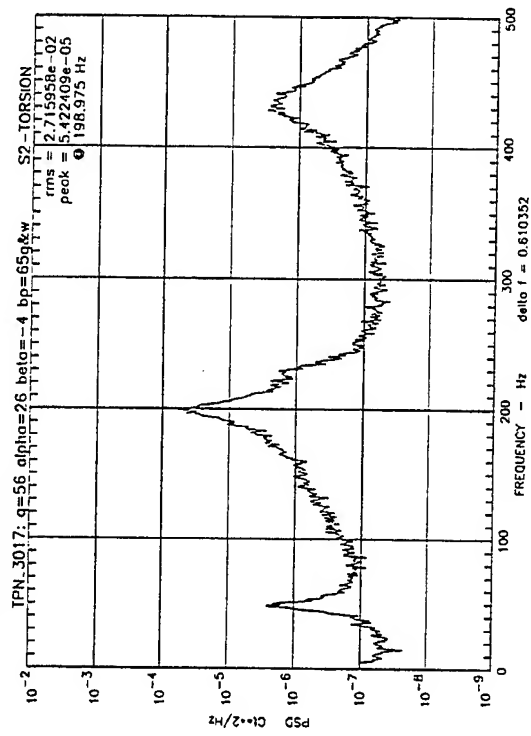
F-15 Tail Buffet Test



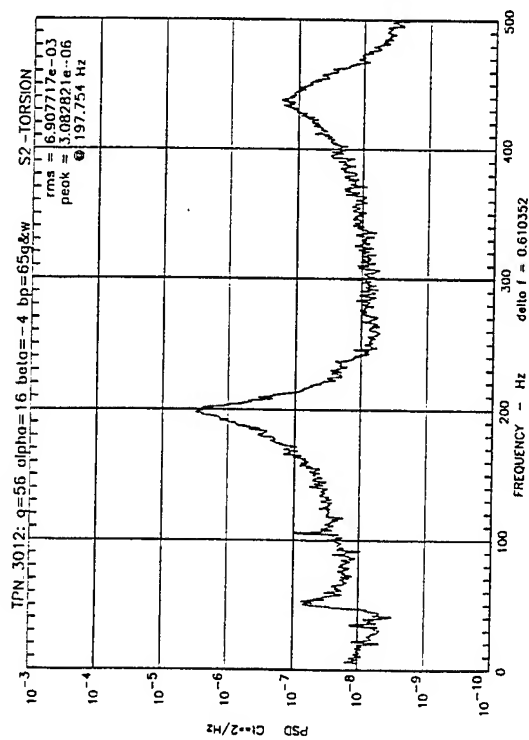
F-15 Tail Buffet Test



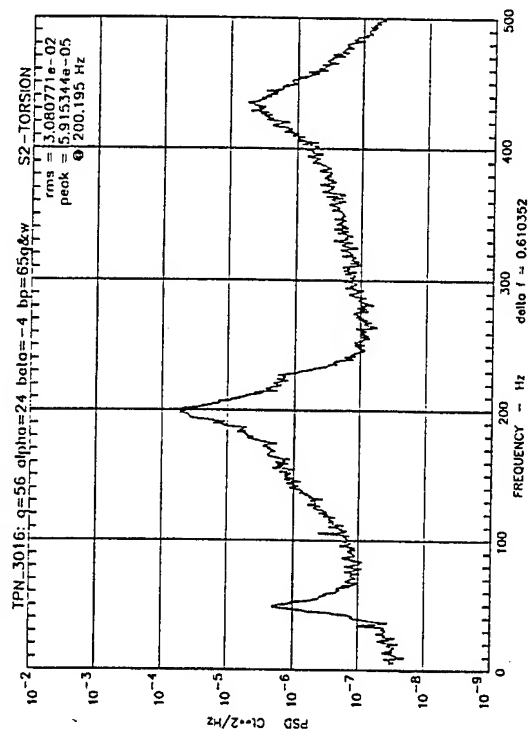
F-15 Tail Buffet Test



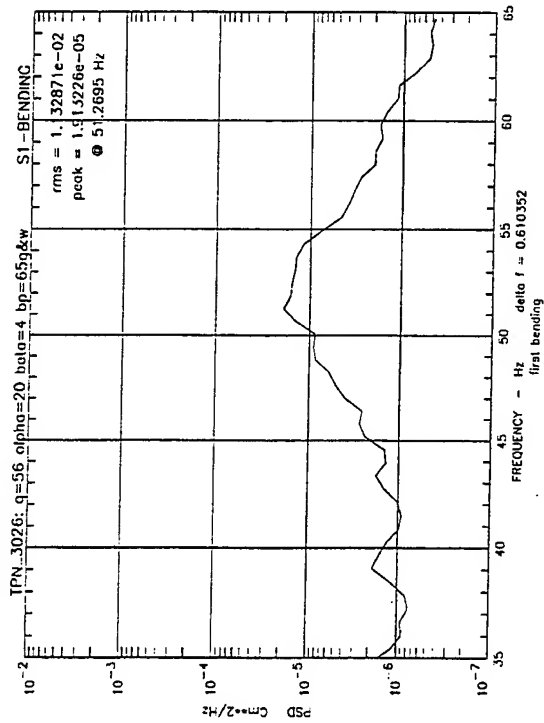
F-15 Tail Buffet Test



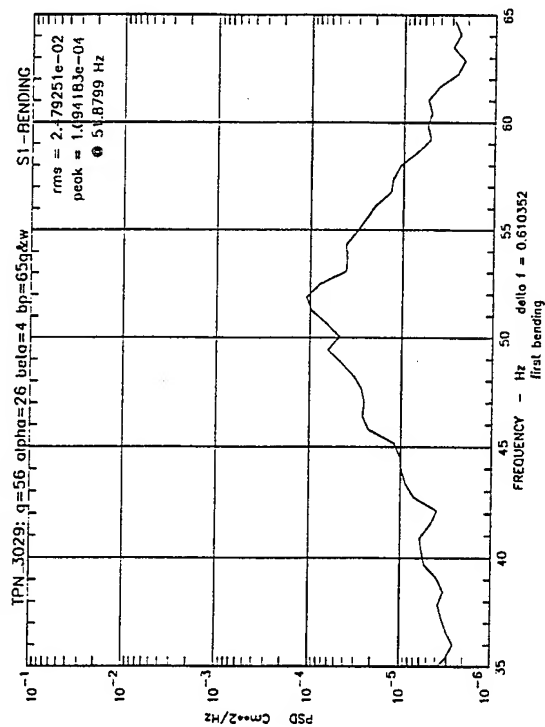
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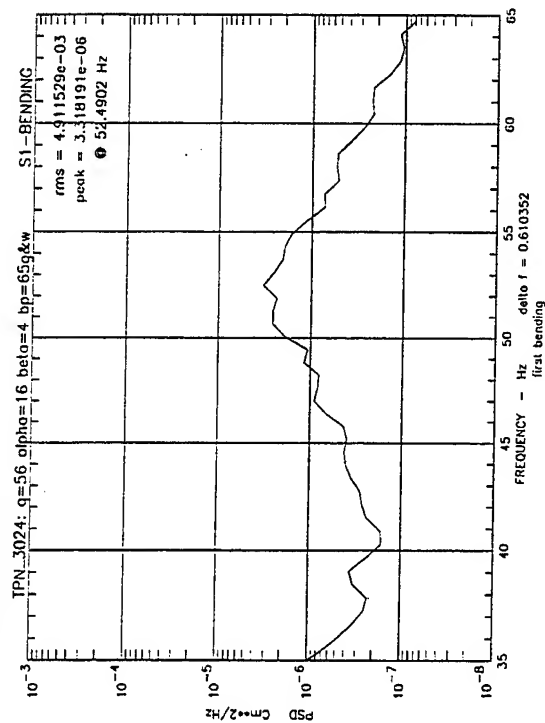
F-15 Tail Buffet Test



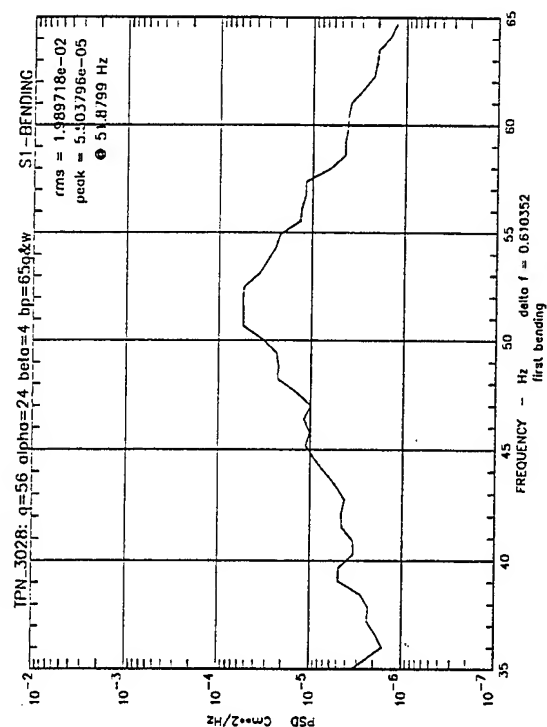
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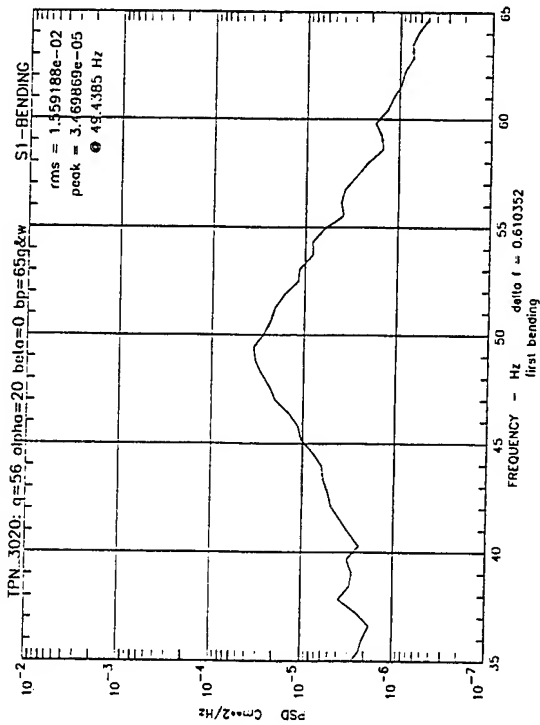
F-15 Tail Buffet Test



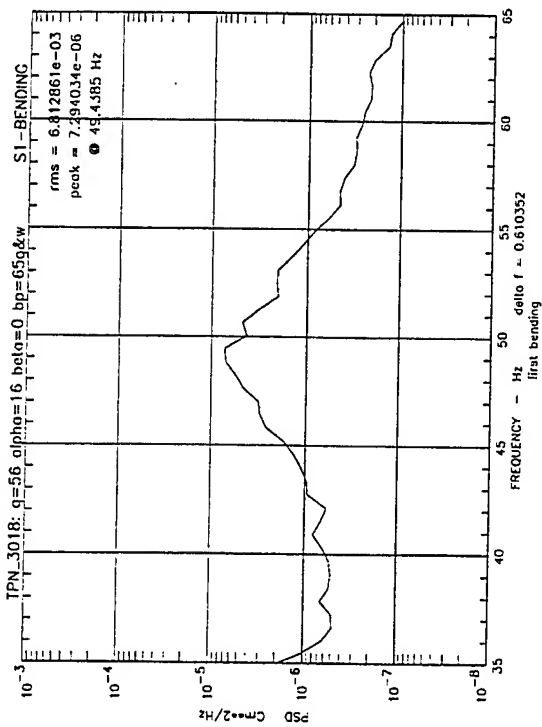
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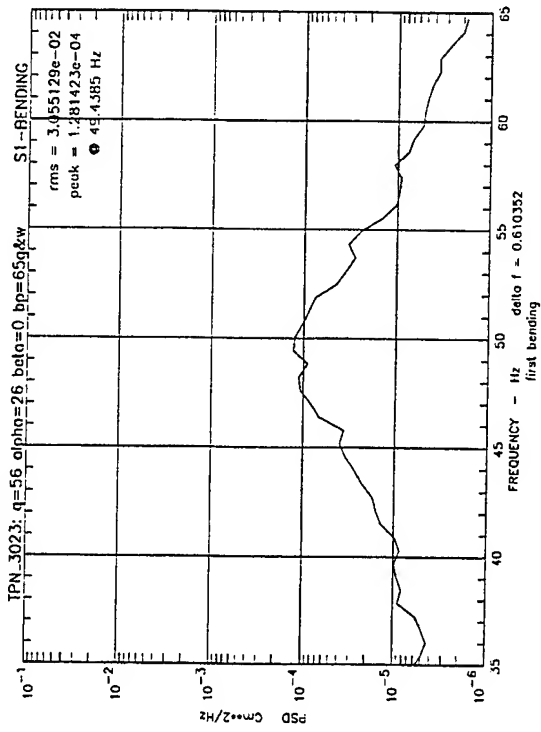
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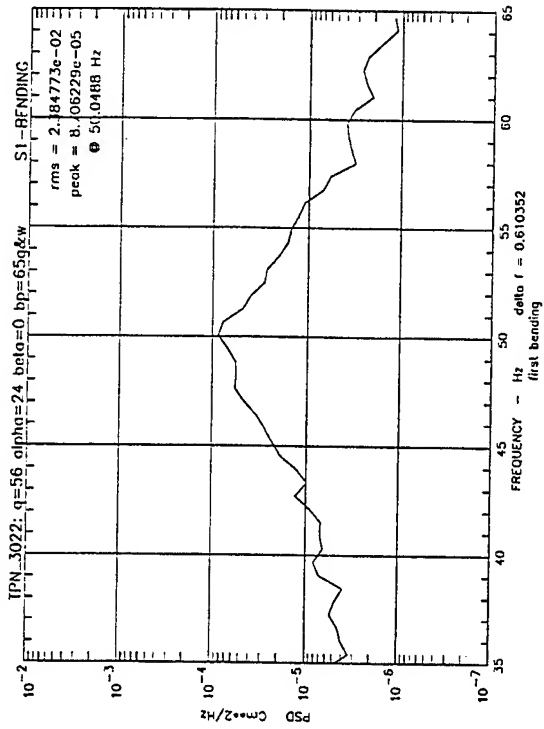
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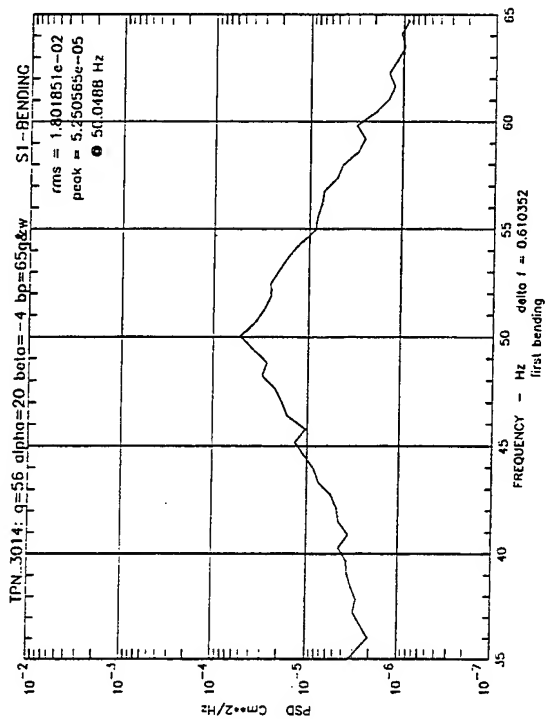
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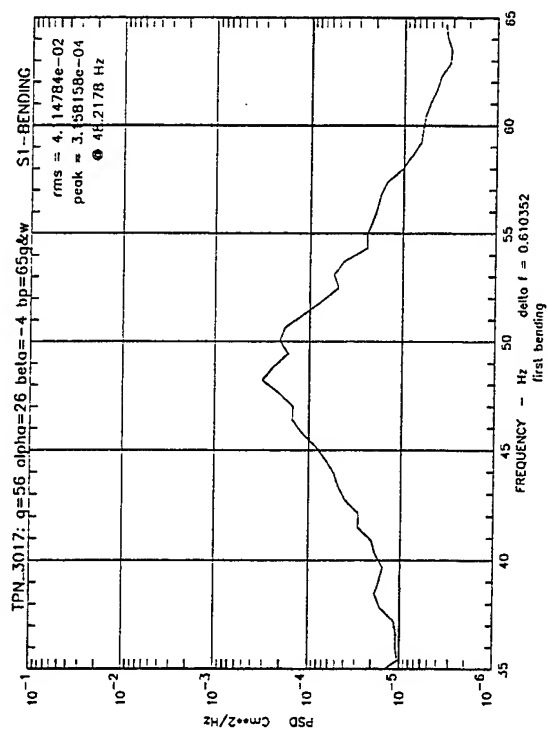
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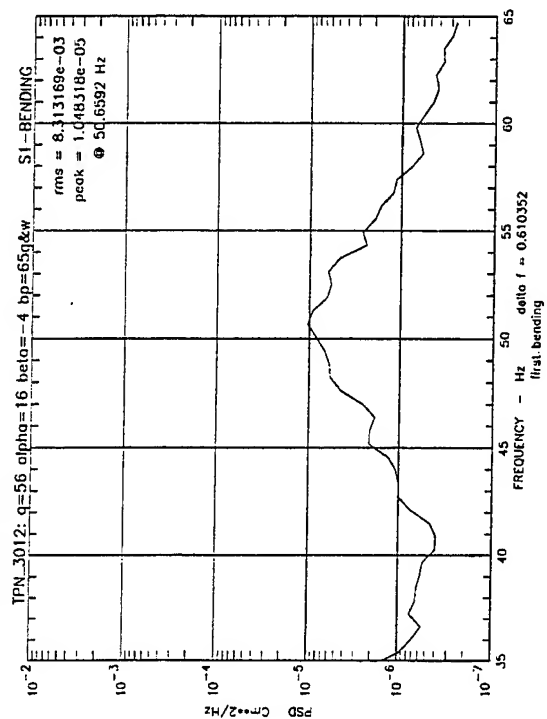
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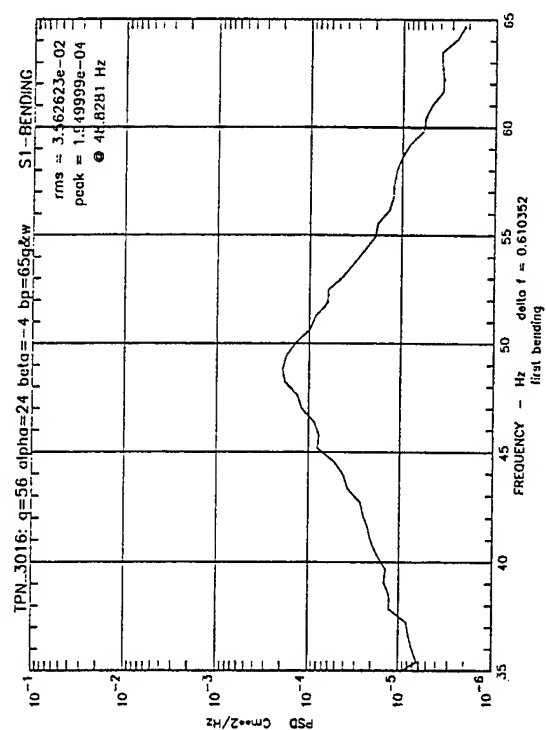
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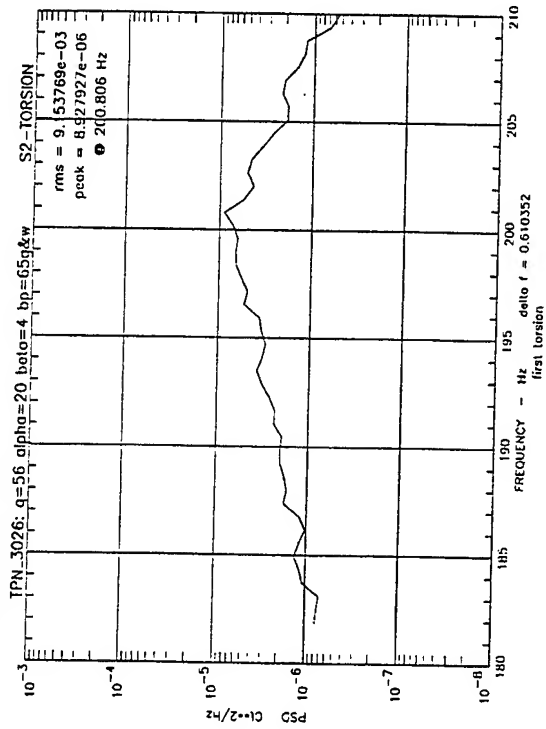
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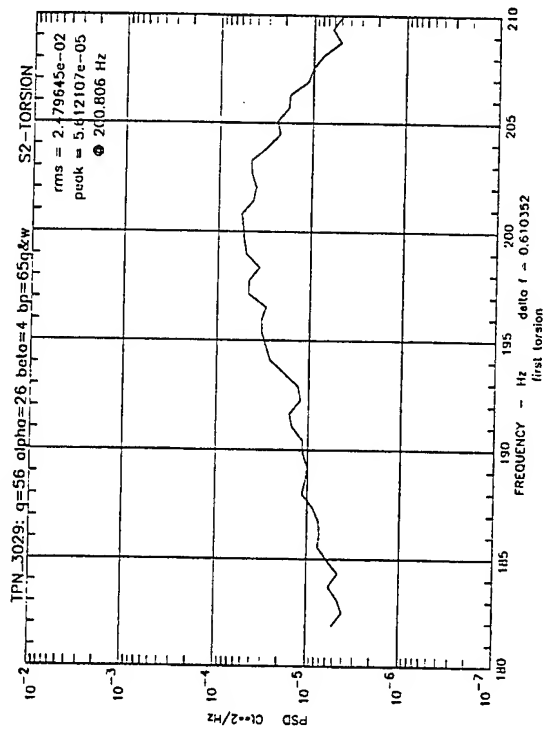
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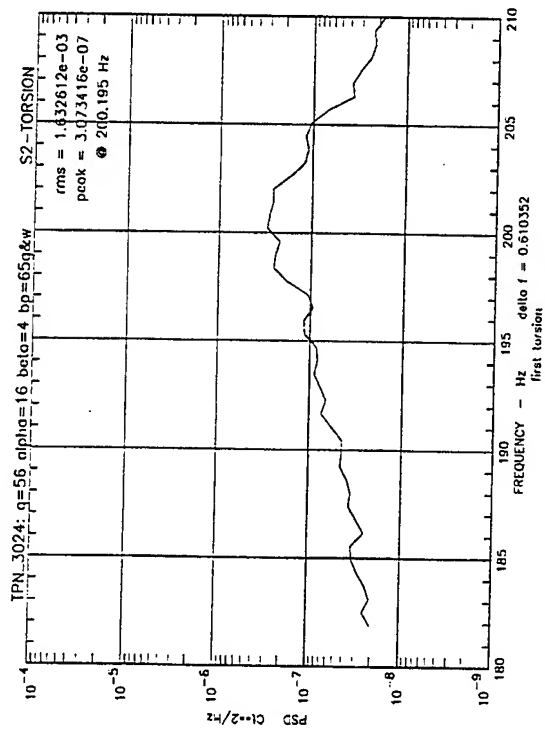
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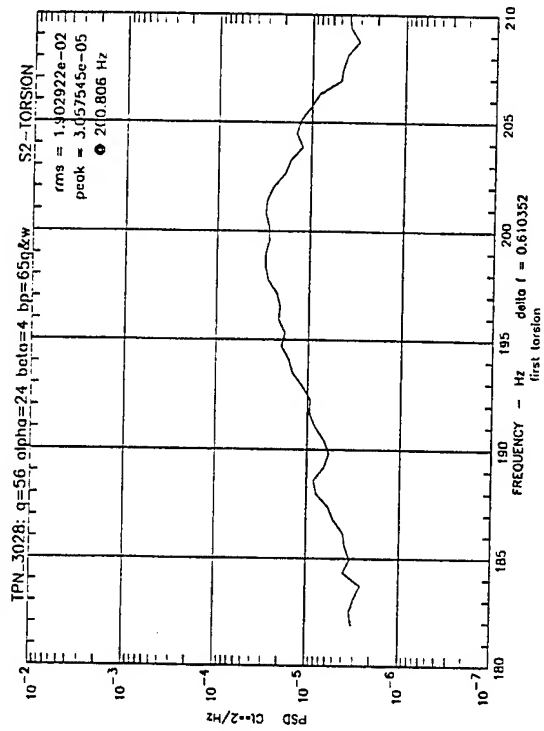
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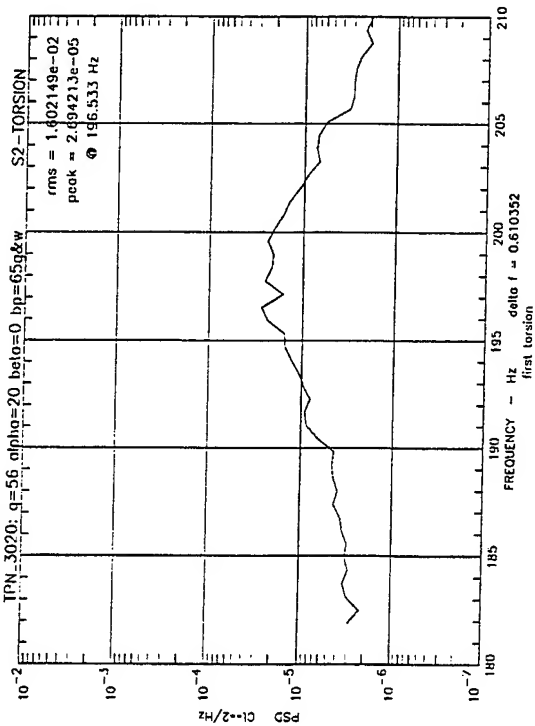
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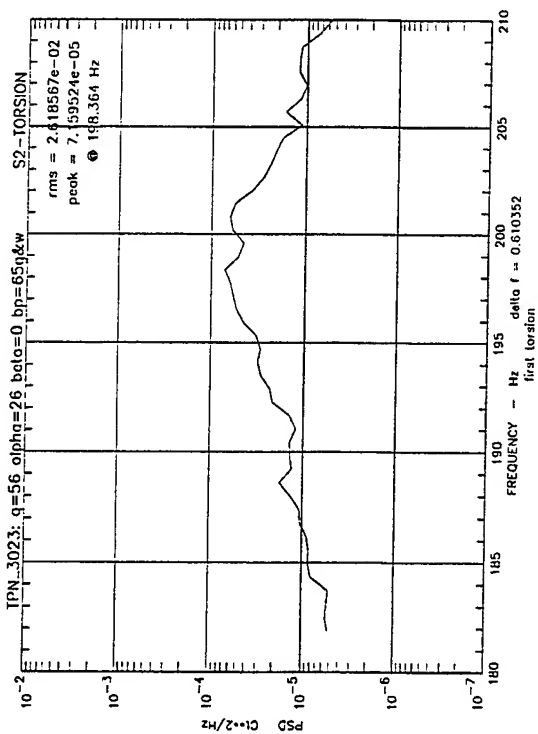
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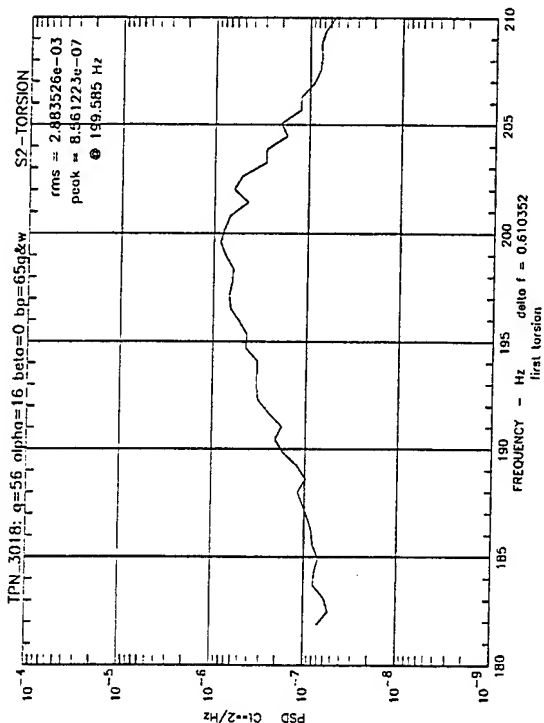
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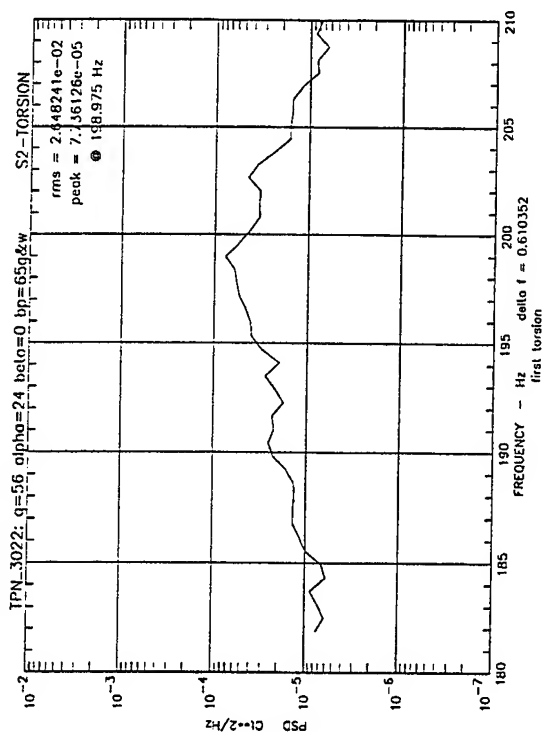
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F-15 Tail Buffet Test

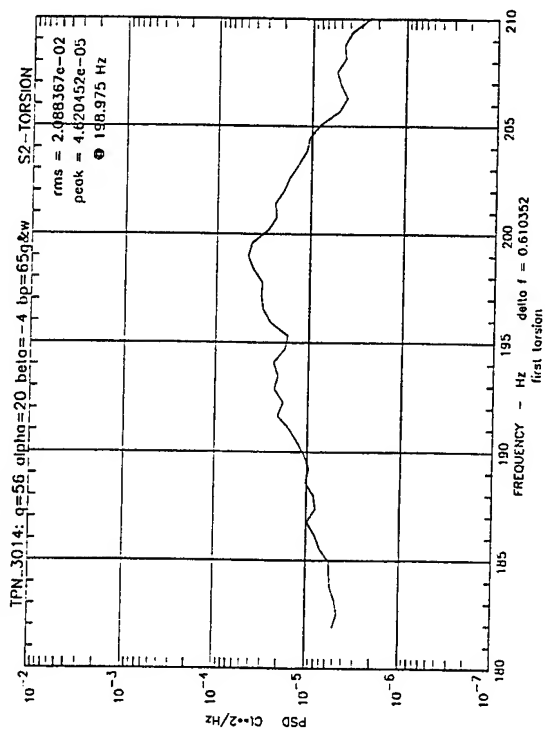


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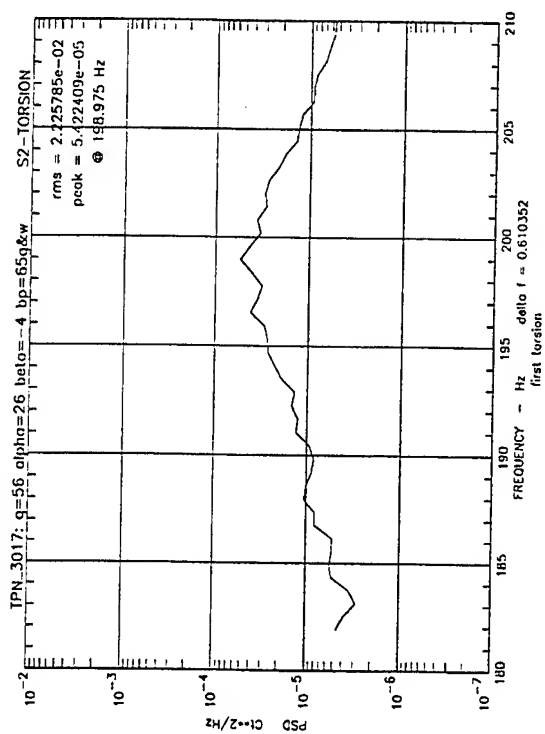




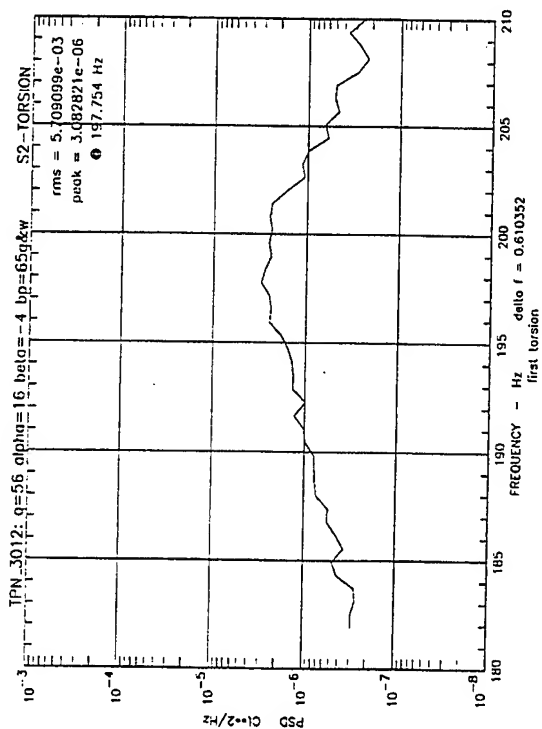
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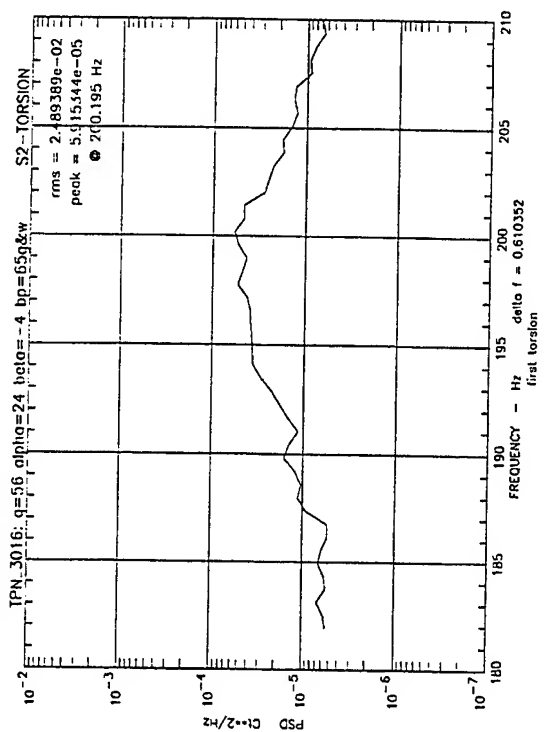
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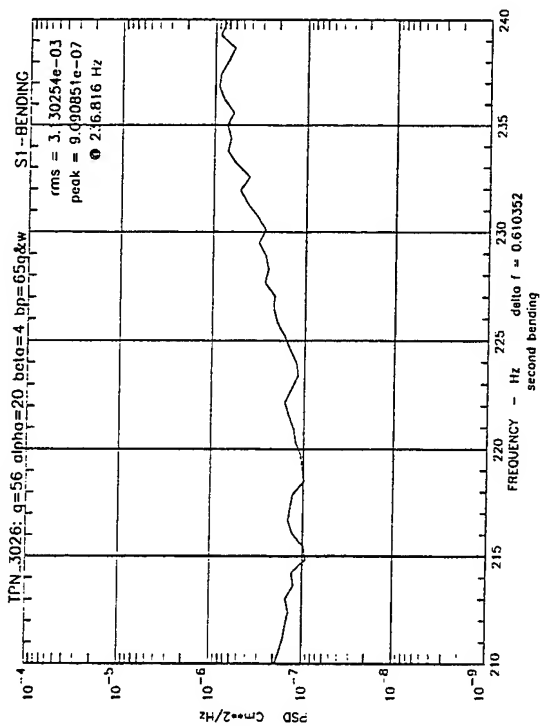
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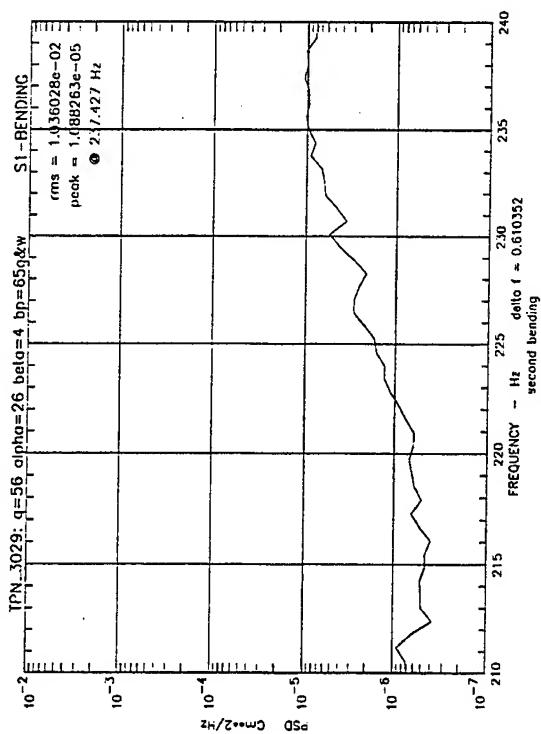
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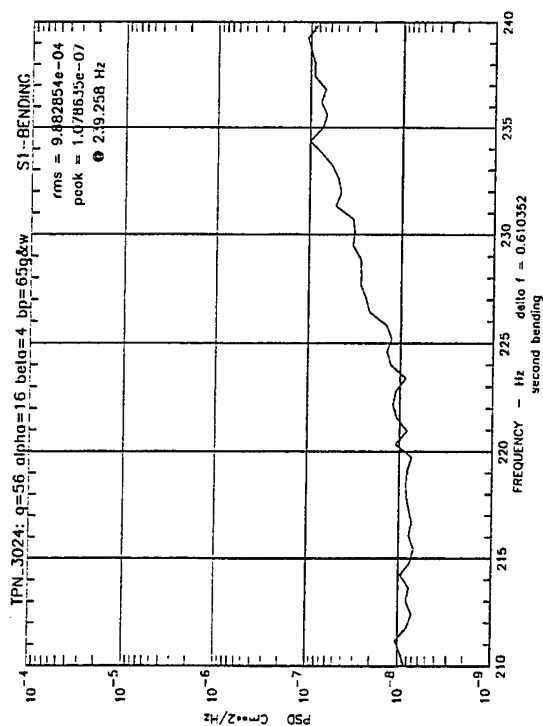
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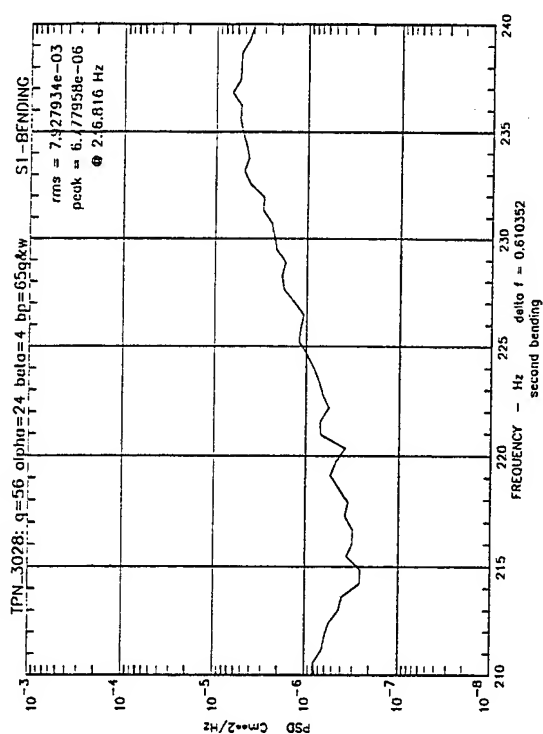
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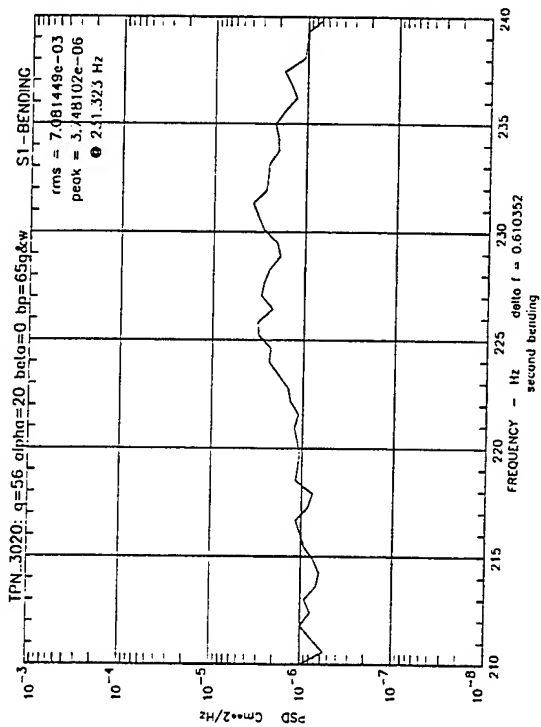
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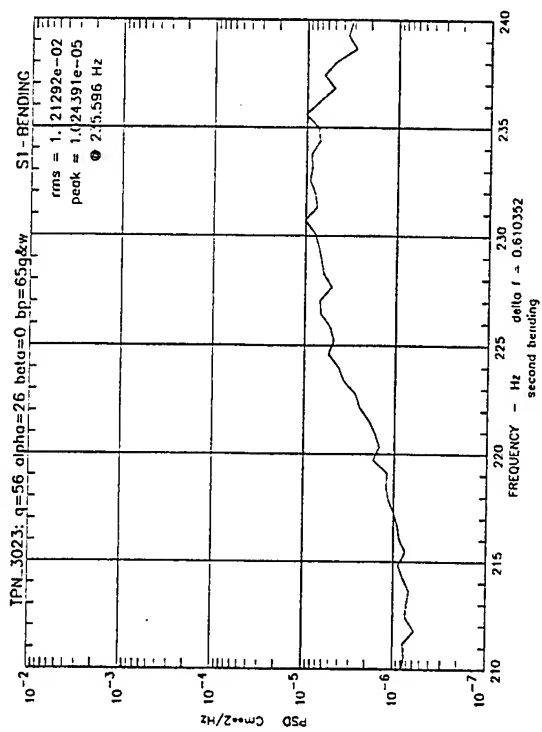
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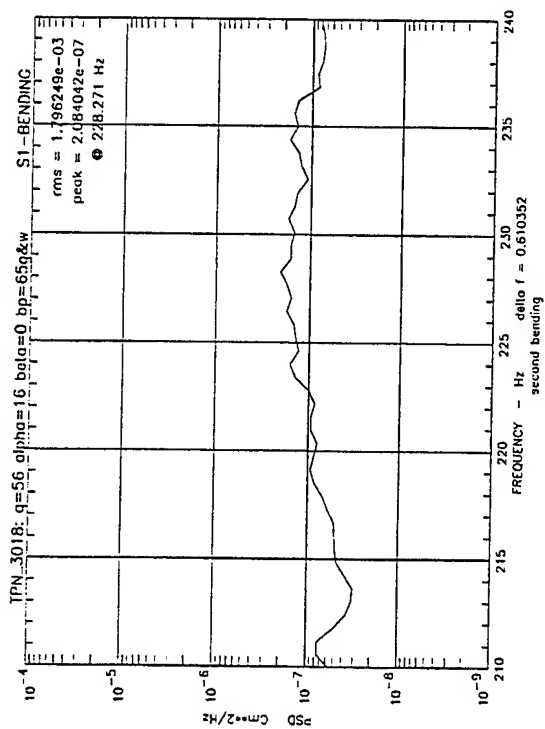
# F-15 Tail Buffet Test



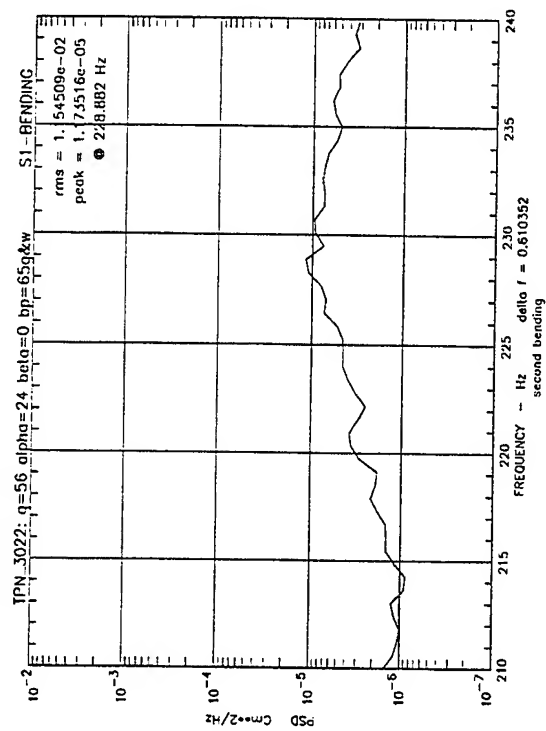
# F-15 Tail Buffet Test



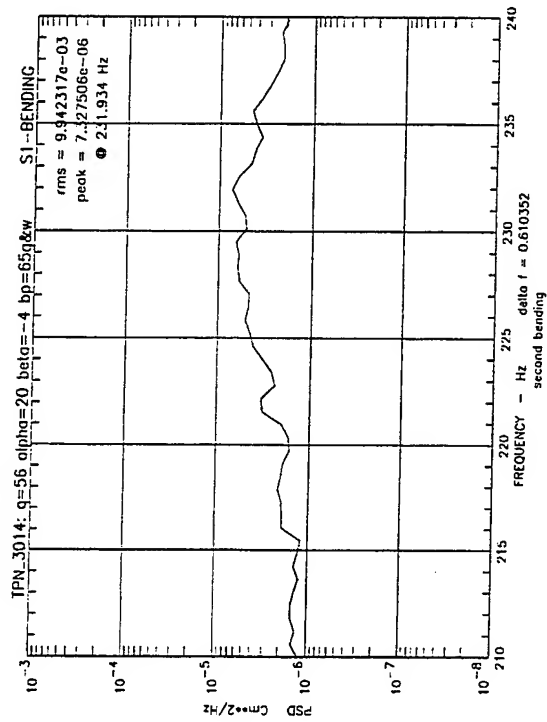
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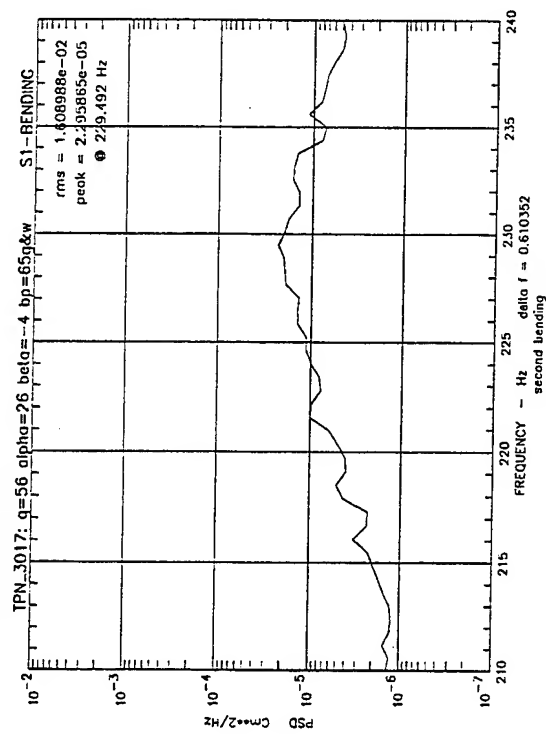
# F-15 Tail Buffet Test



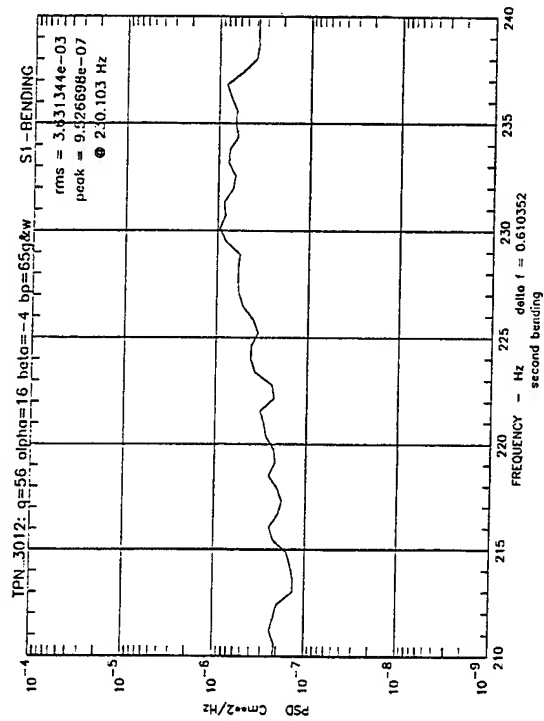
# F-15 Tail Buffet Test



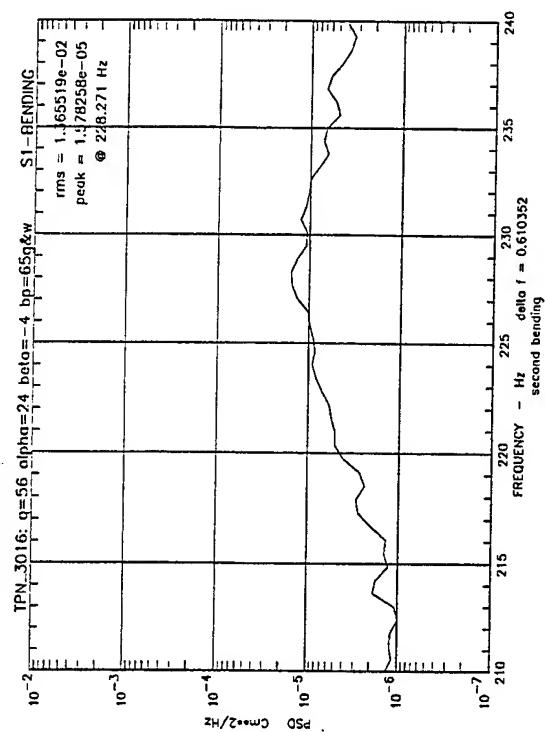
# F-15 Tail Buffet Test



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# F-15 Tail Buffet Test

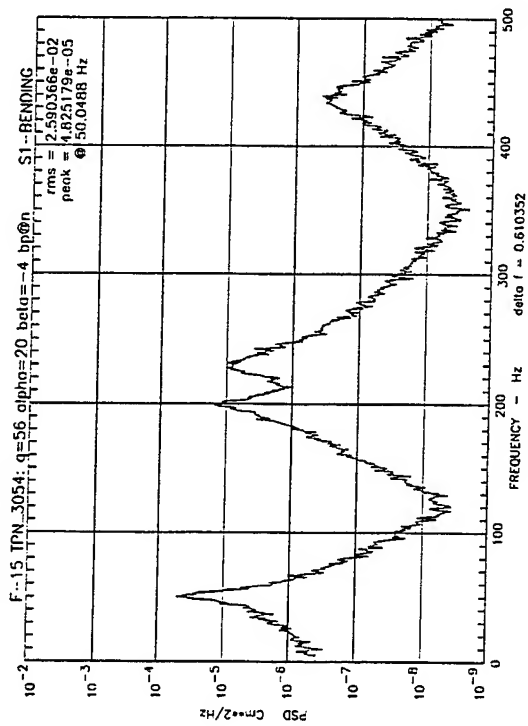


**FLEXIBLE TAIL RESPONSE  
NON DIMENSIONAL BENDING AND TORSION  
PSD GRAPHS**

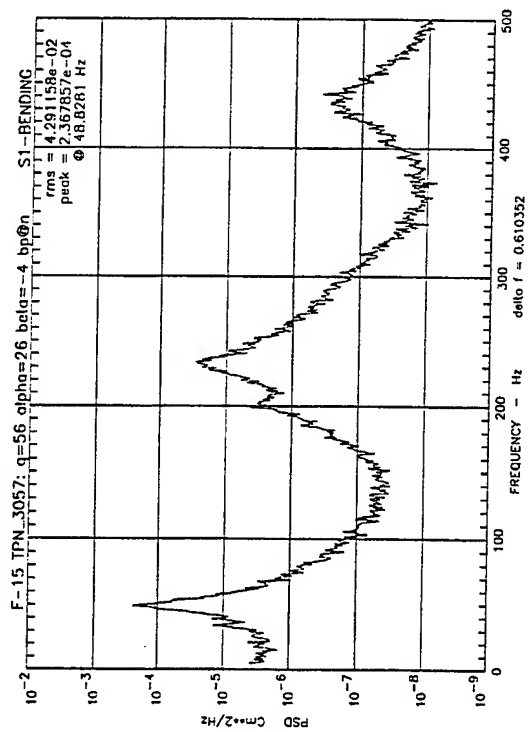
**Q= 56PSF**

**3.1.1.4 NBP = 87 PSI, BETA = 0, +4, -4 DEG, ALPHA=16....26 DEG**

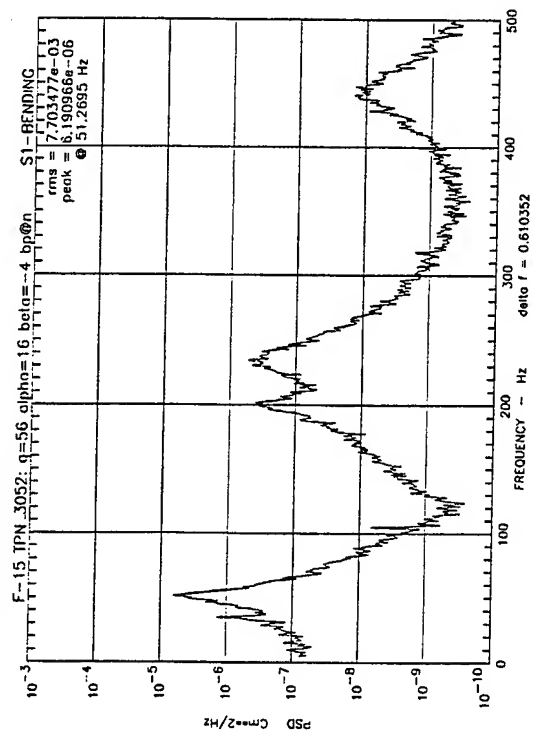
F-15 Tail Buffet Test



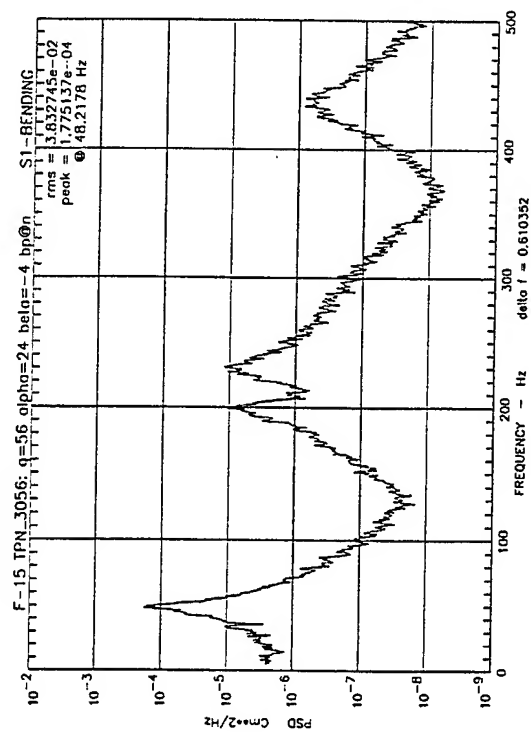
F-15 Tail Buffet Test



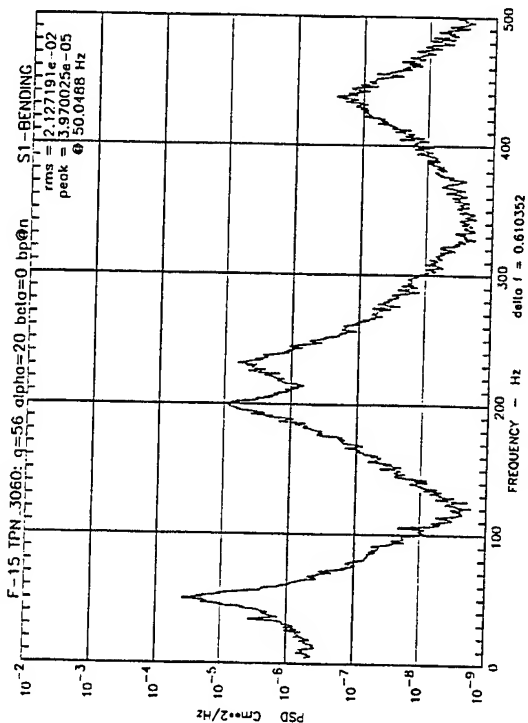
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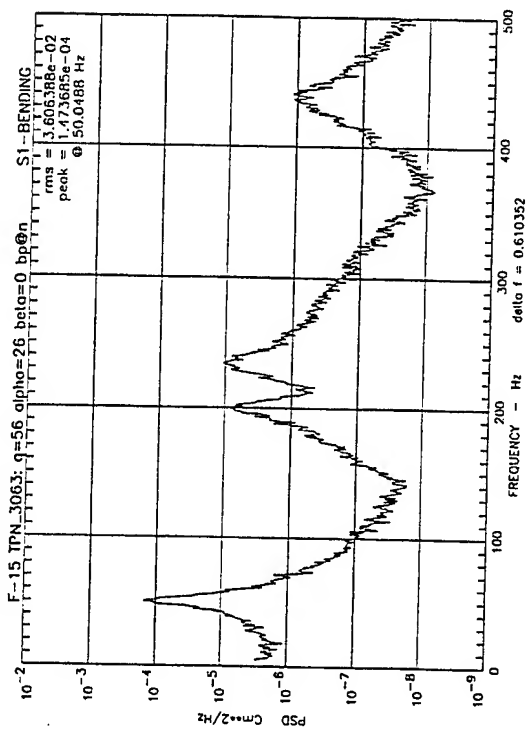
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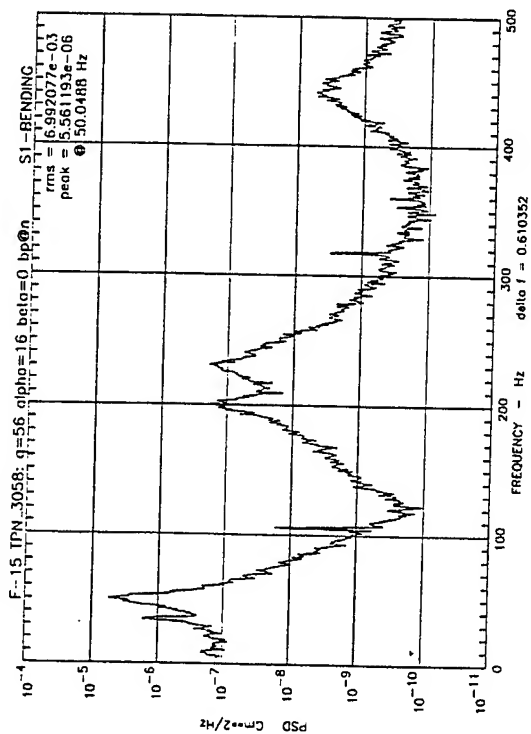
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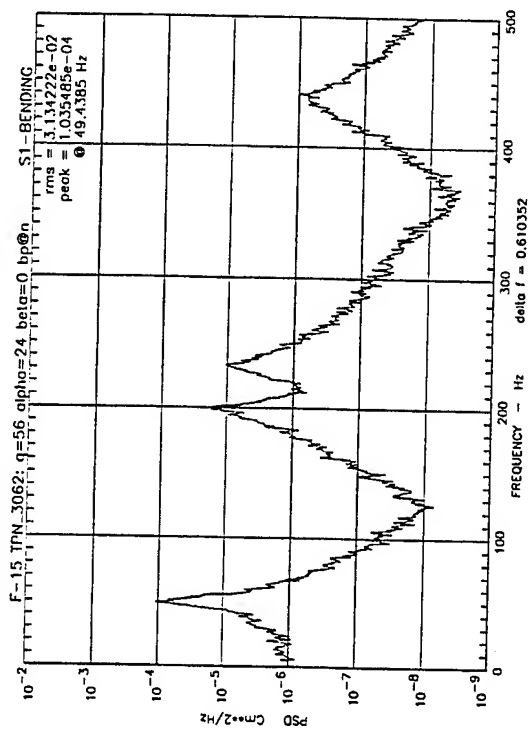
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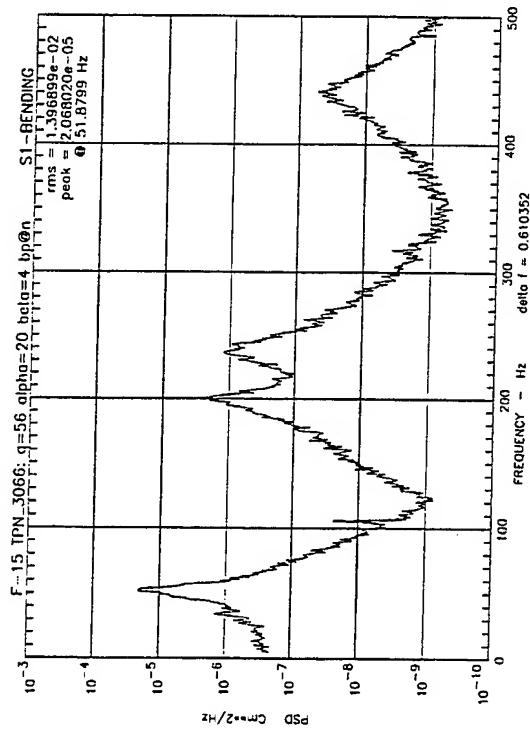
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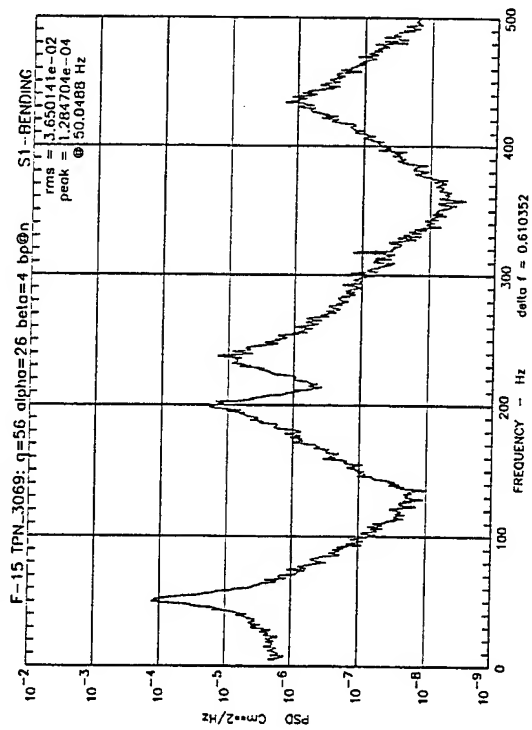
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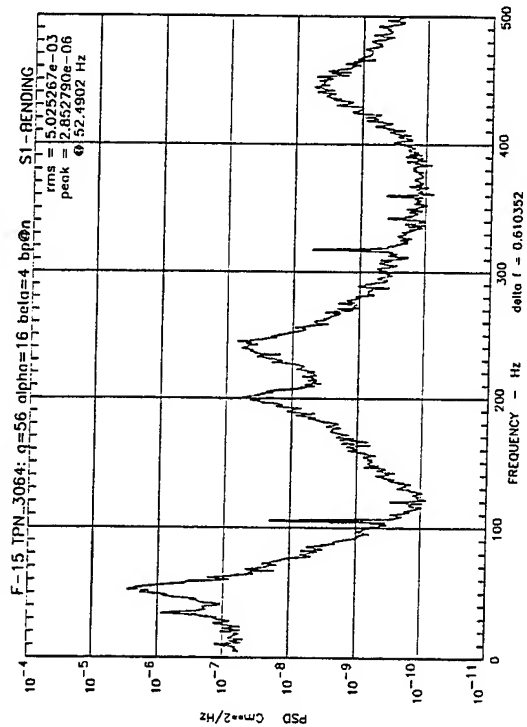
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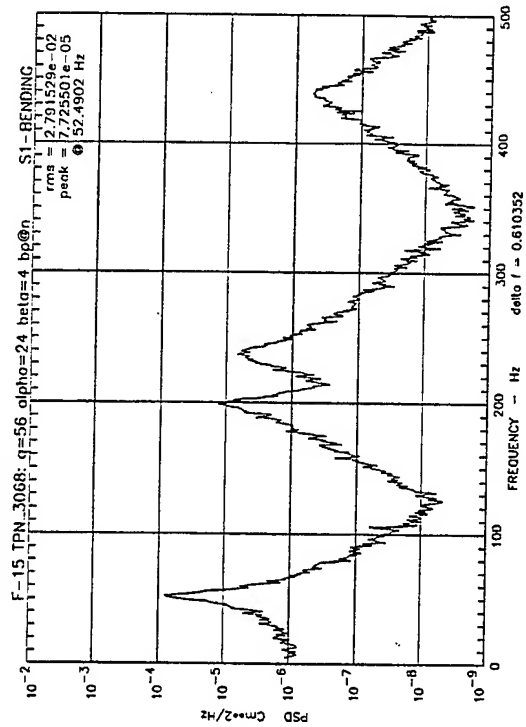
F-15 Tail Buffet Test



F-15 Tail Buffet Test

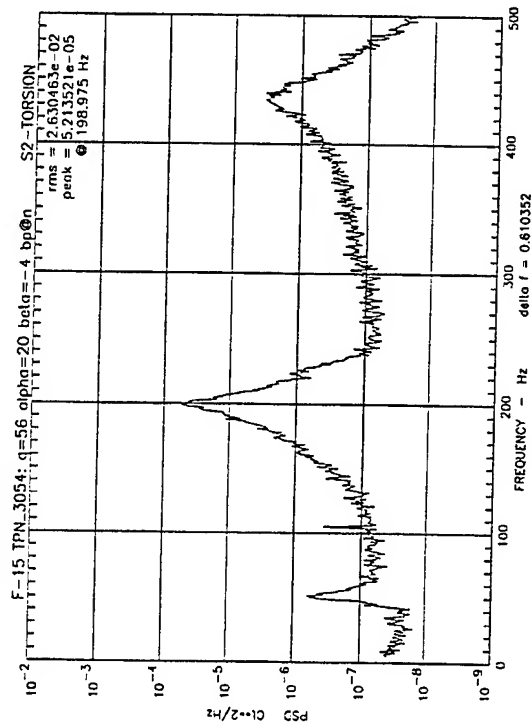


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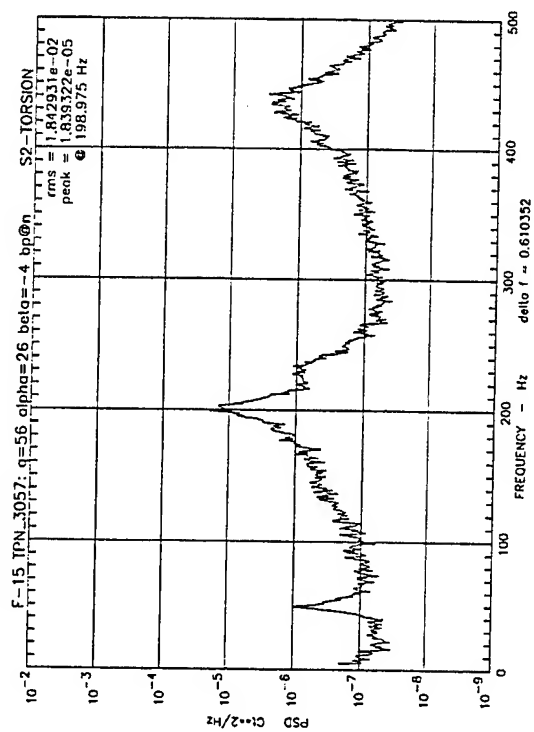




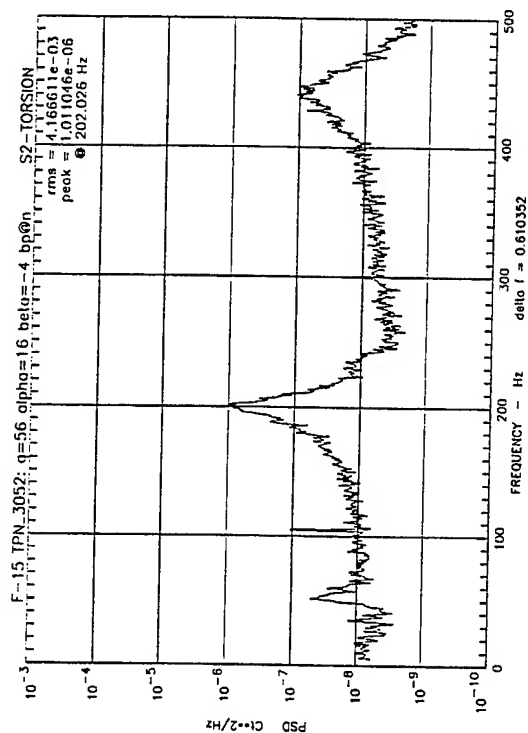
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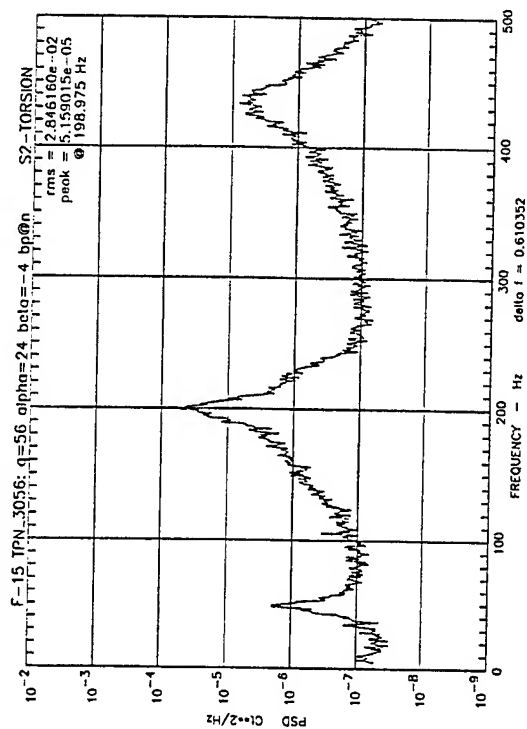
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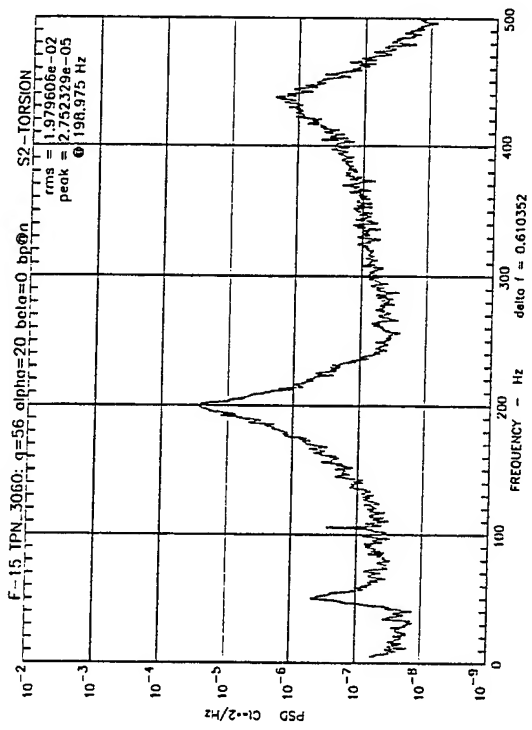
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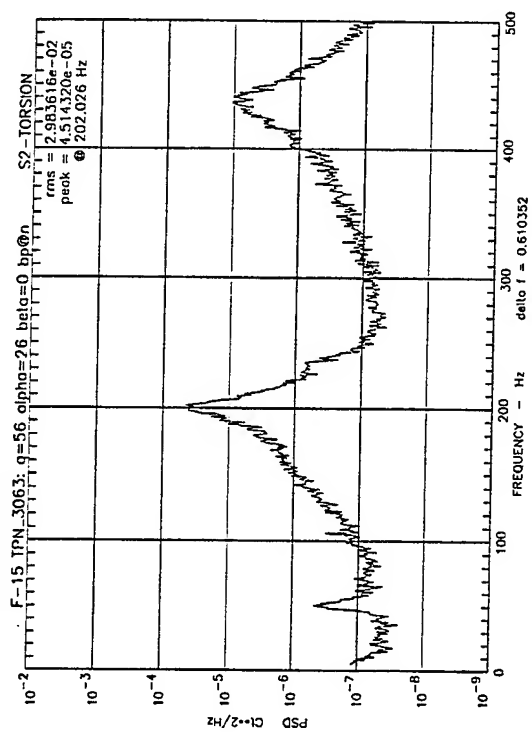
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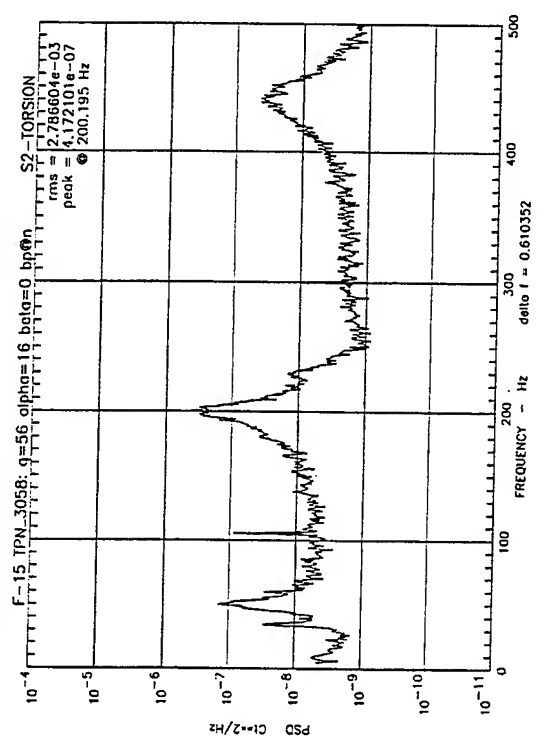
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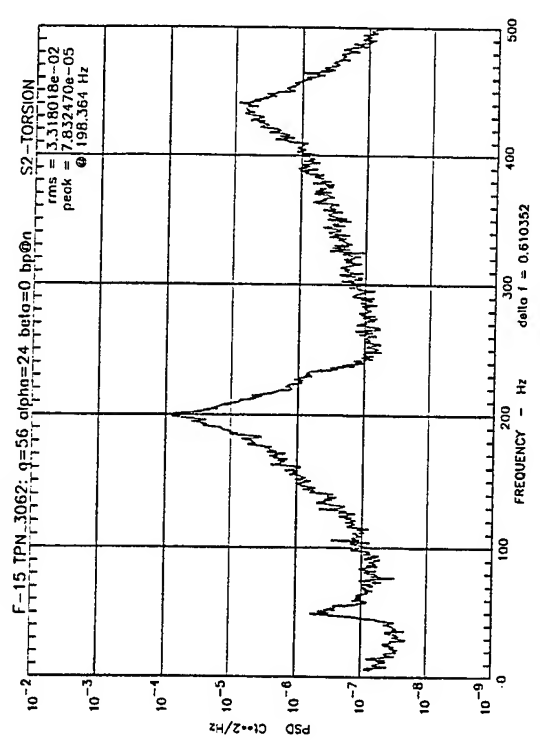
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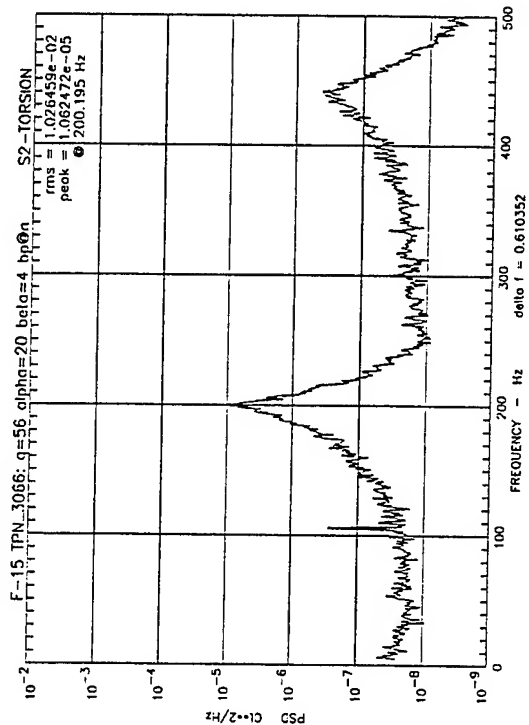
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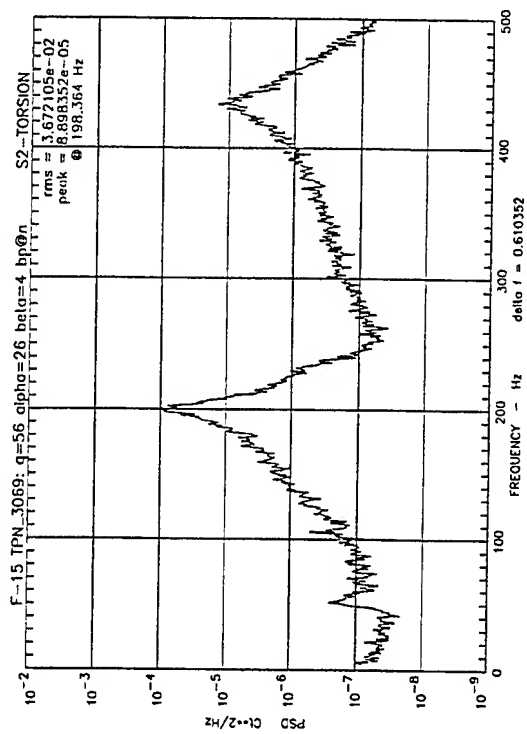
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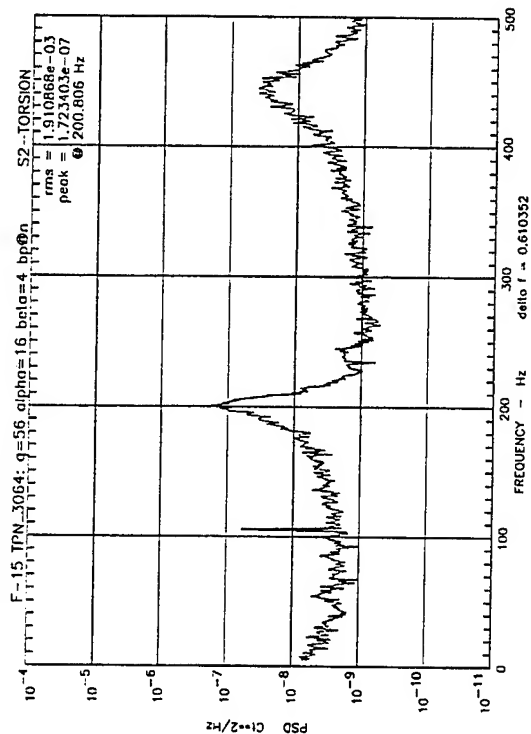
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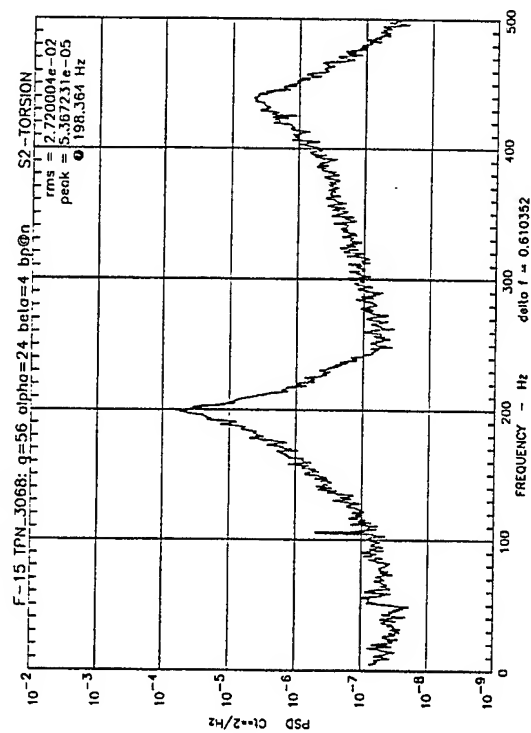
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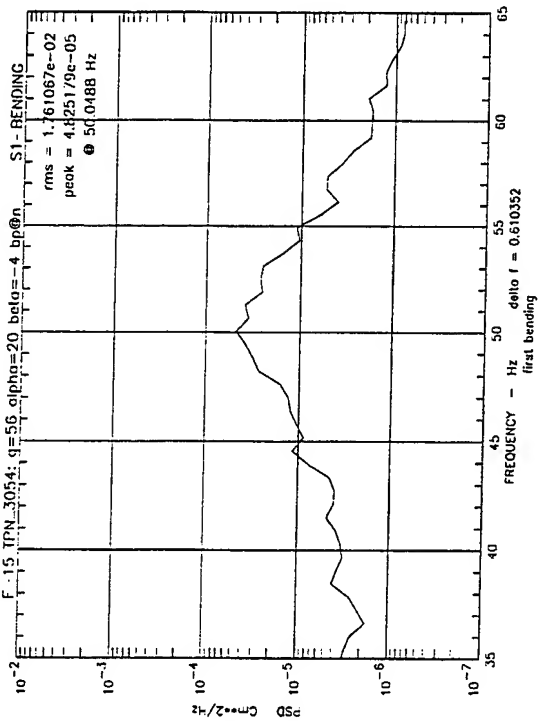
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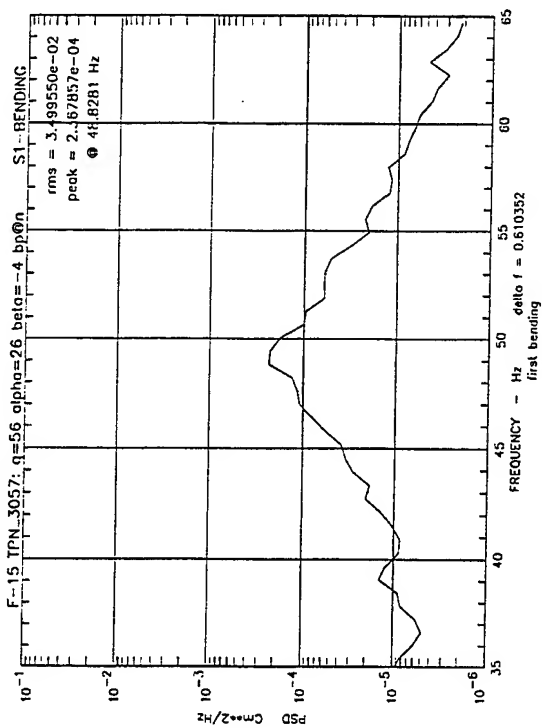
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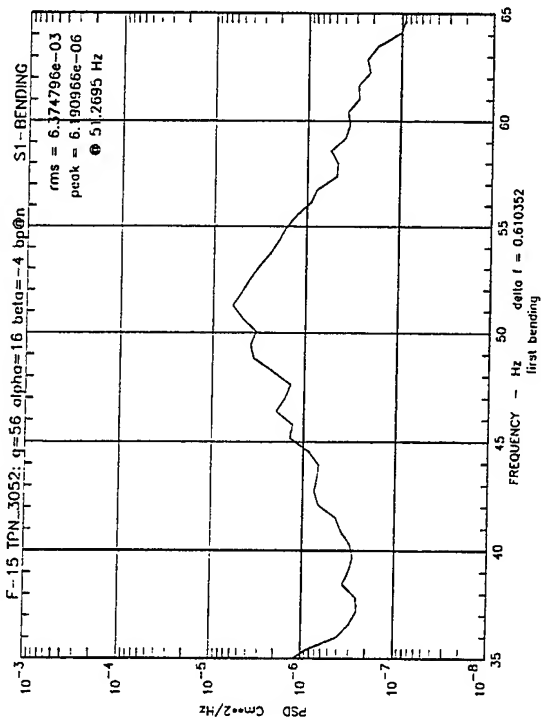
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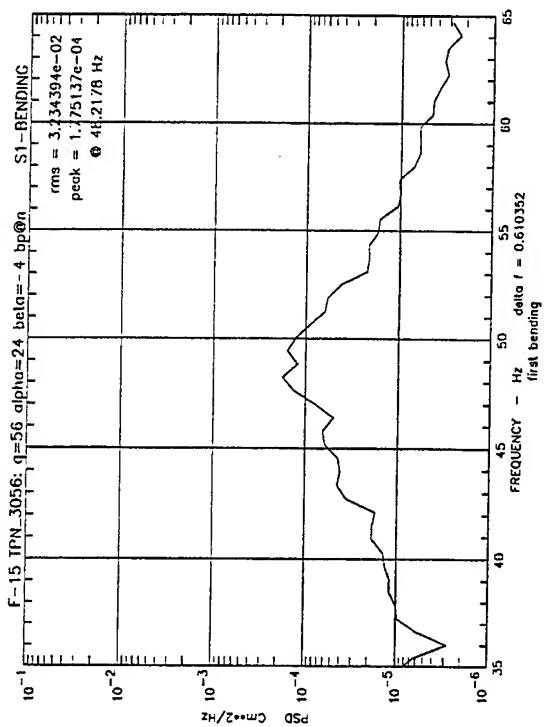
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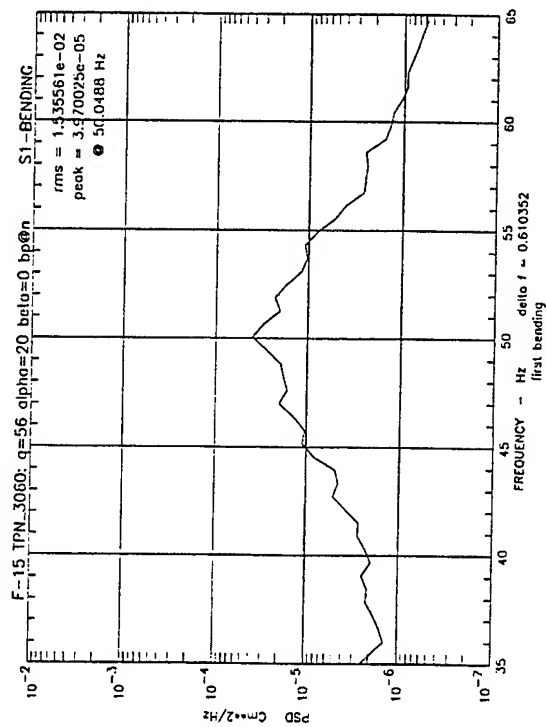
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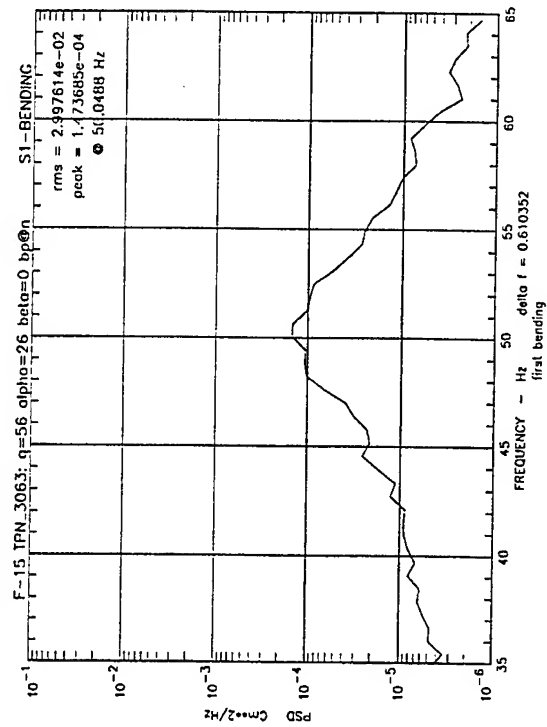
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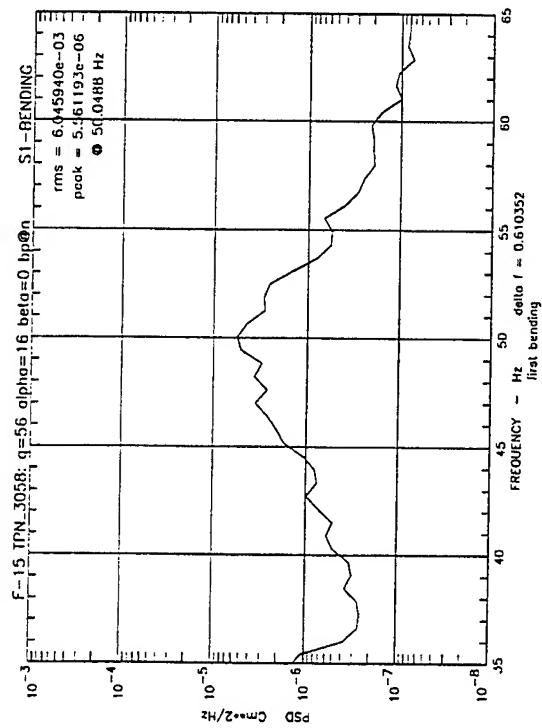
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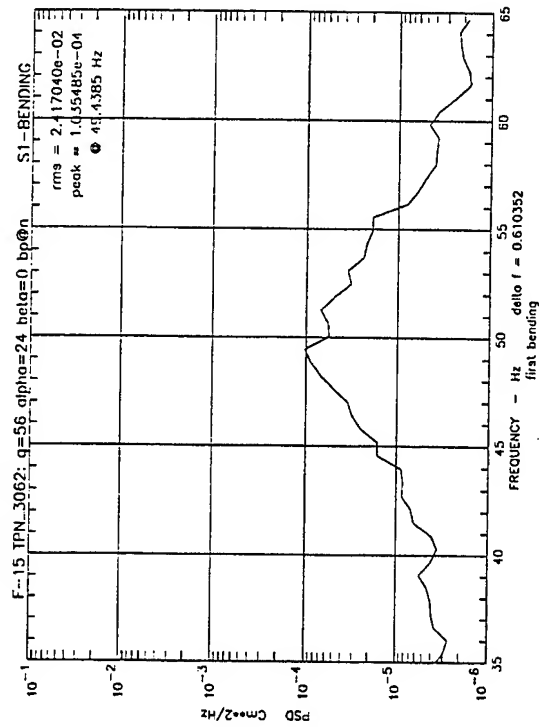
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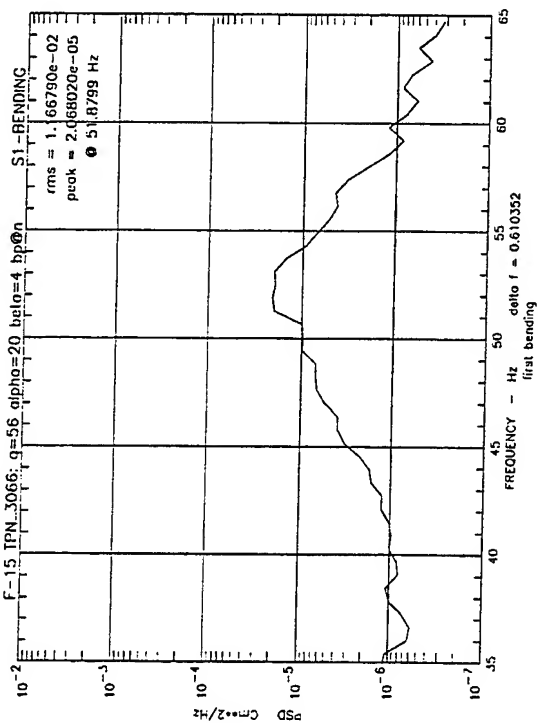
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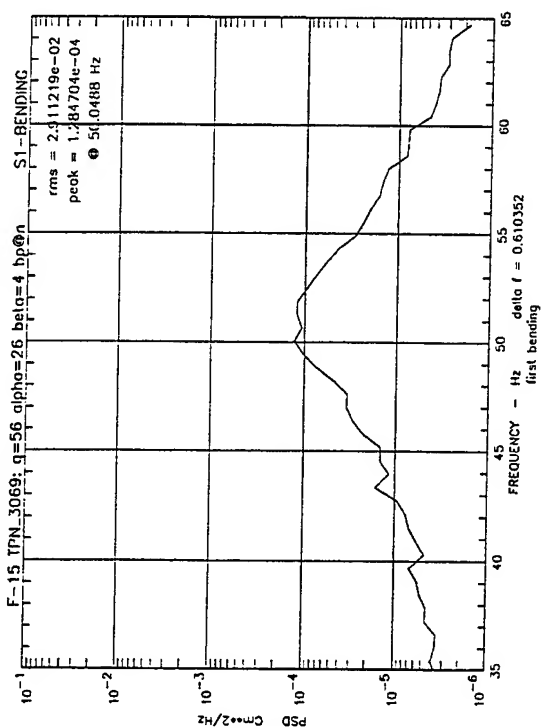
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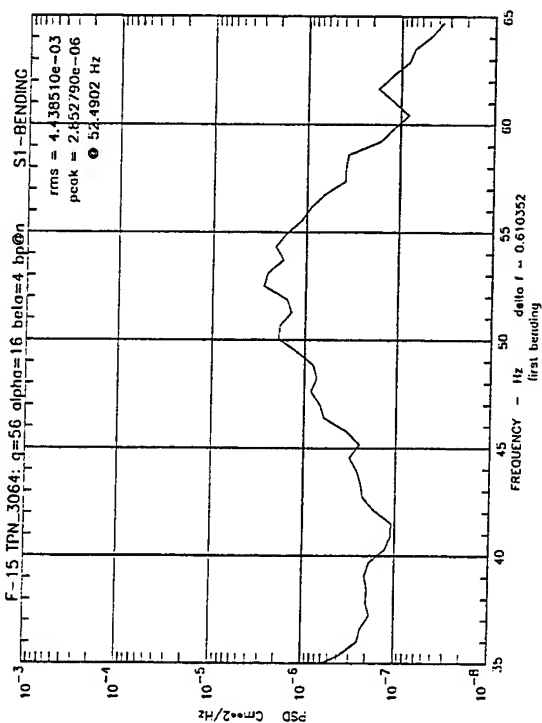
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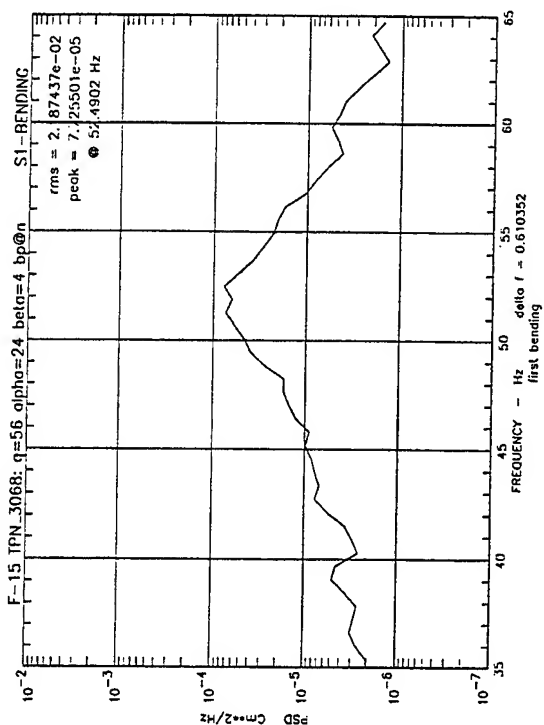
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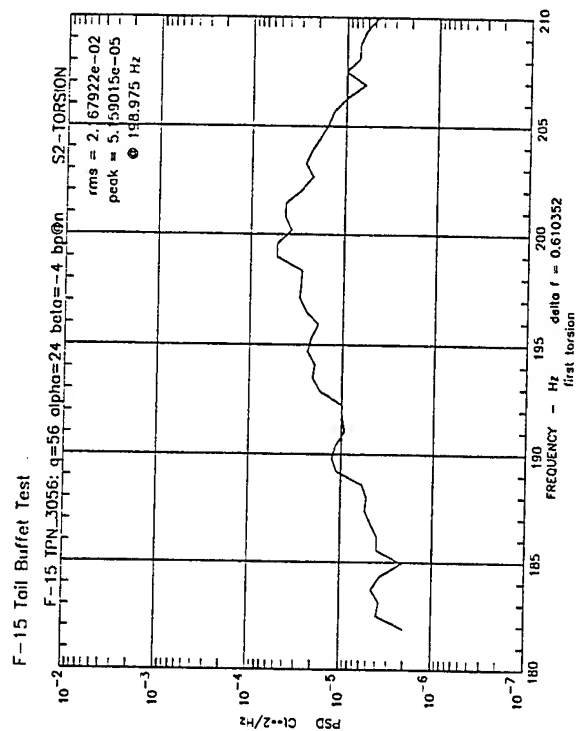
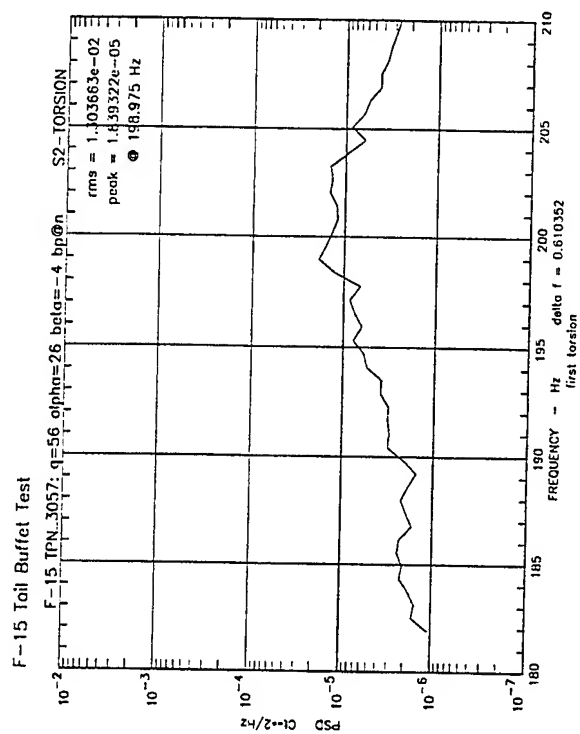
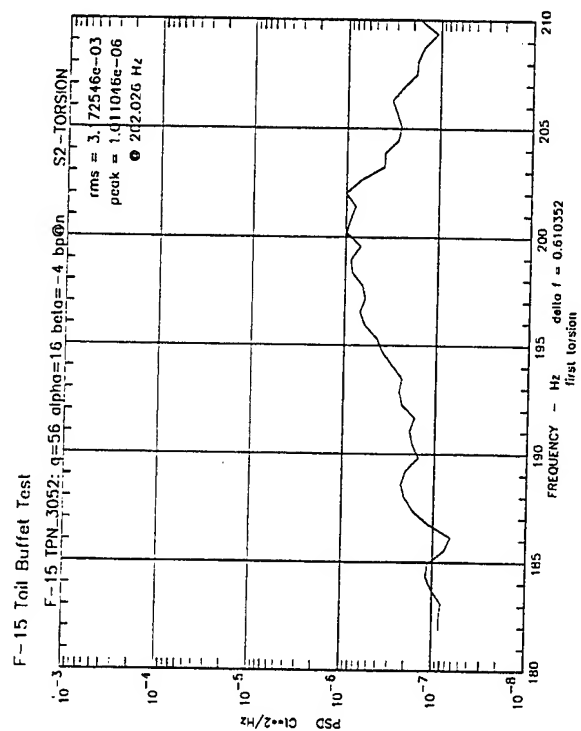
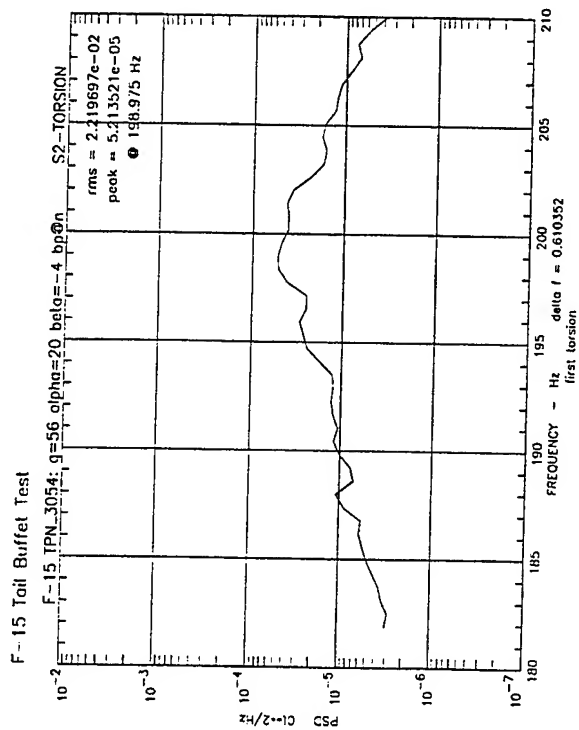


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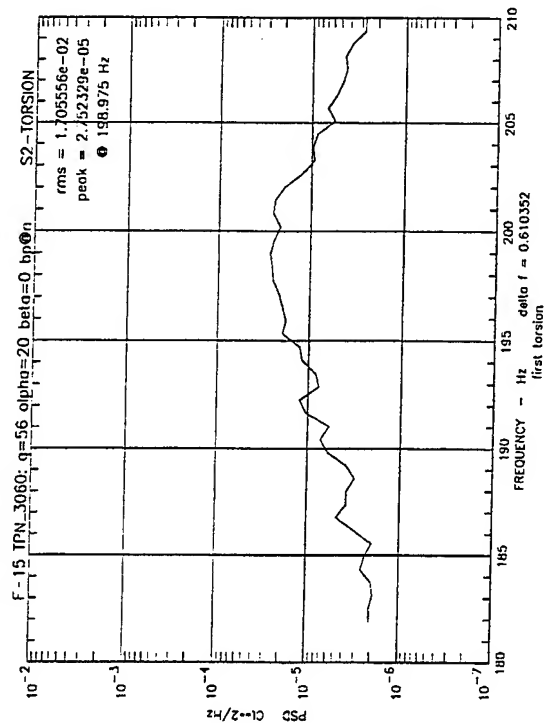


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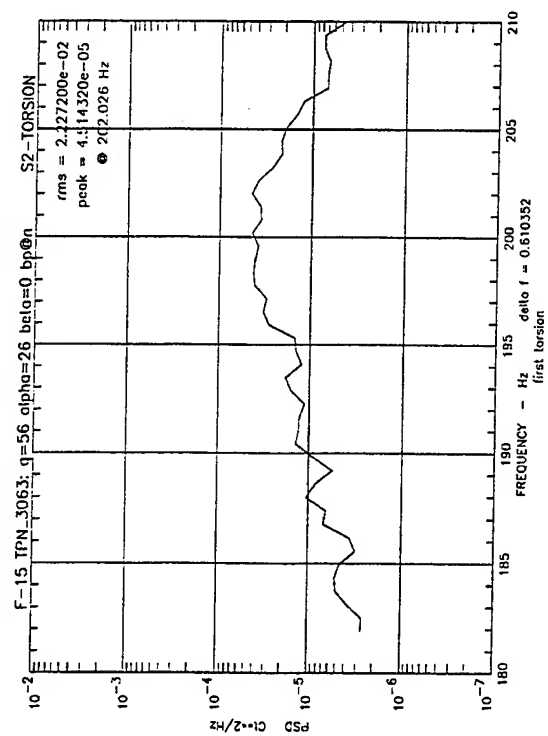




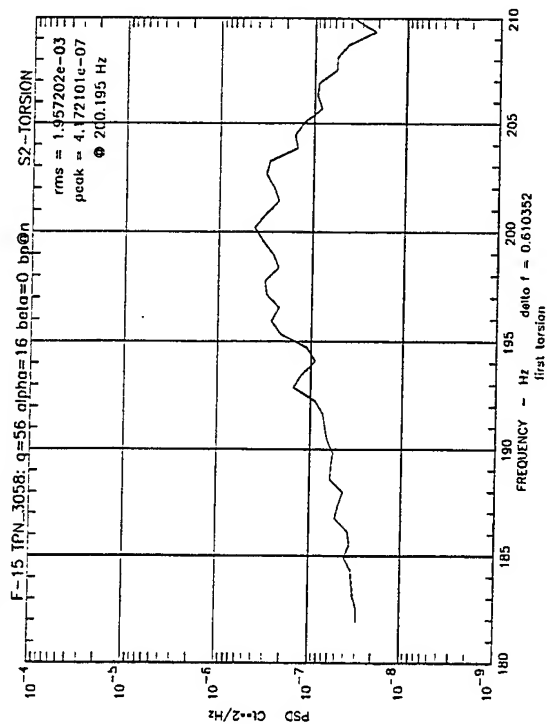
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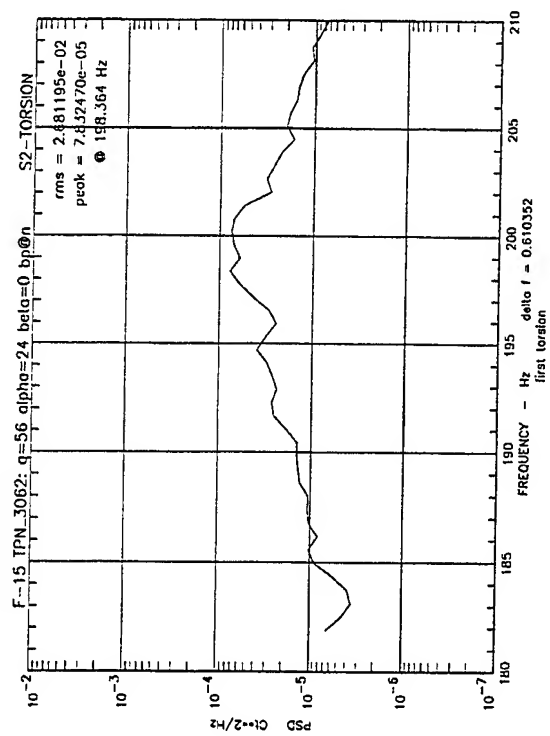
F-15 Tail Buffet Test



F-15 Tail Buffet Test

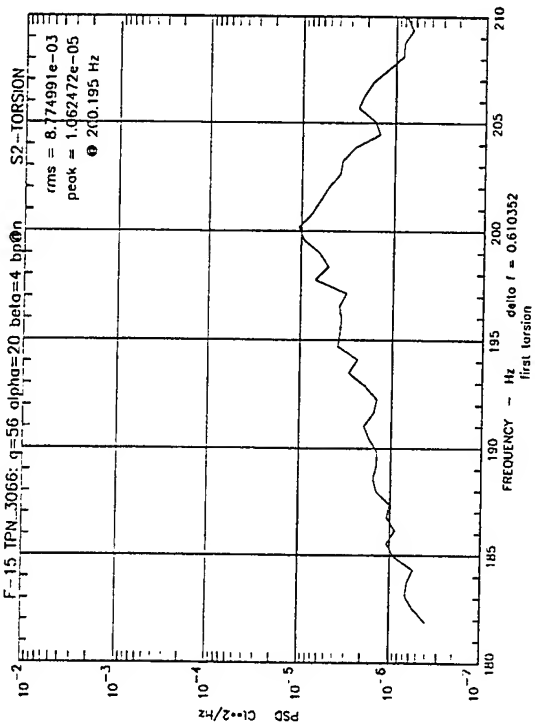


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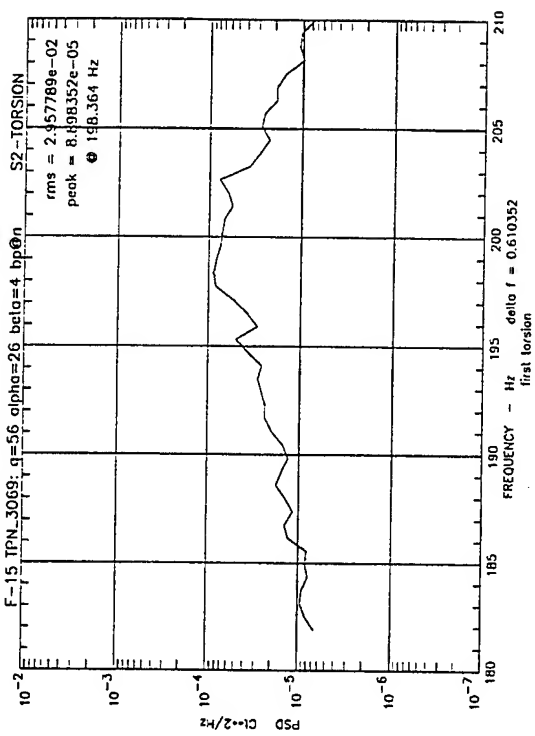




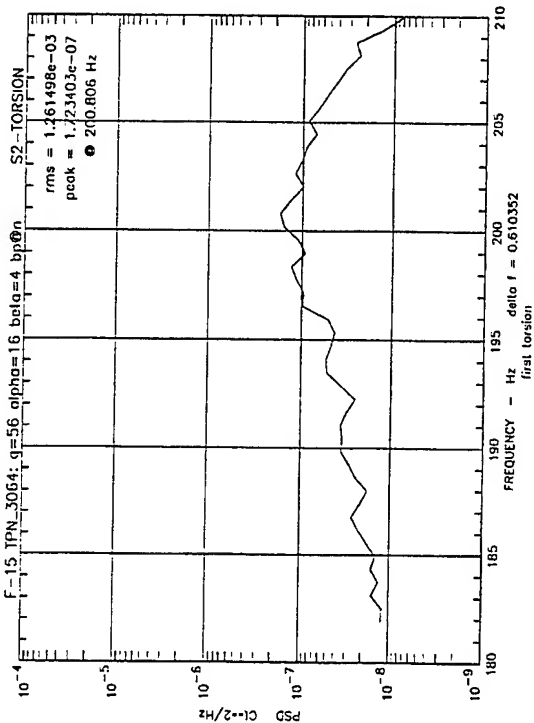
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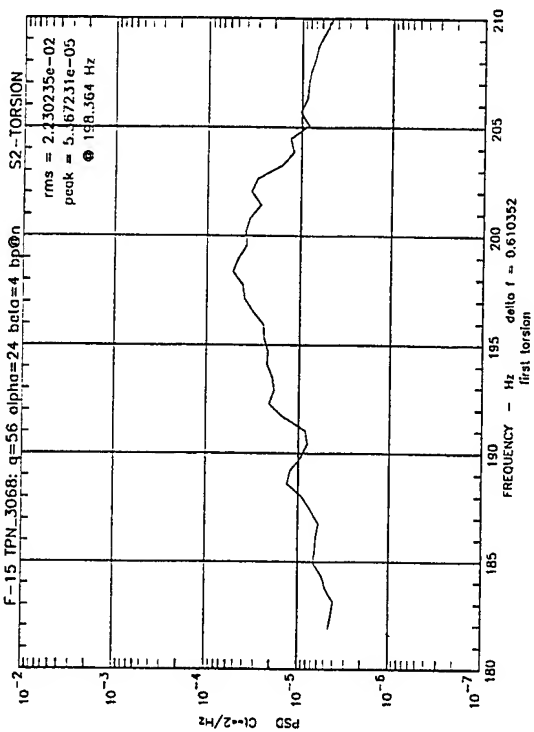
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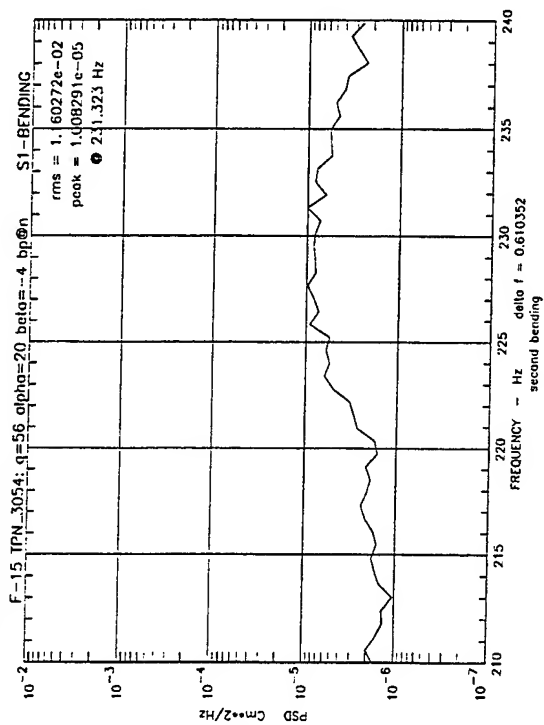
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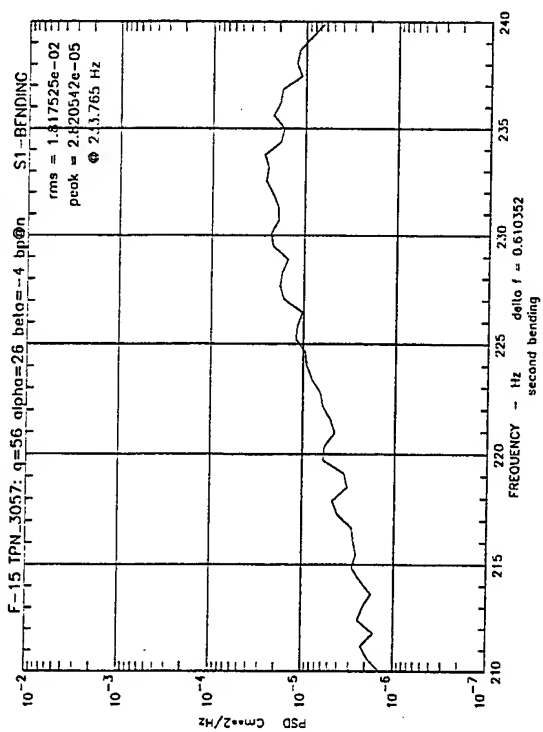
F-15 Tail Buffet Test



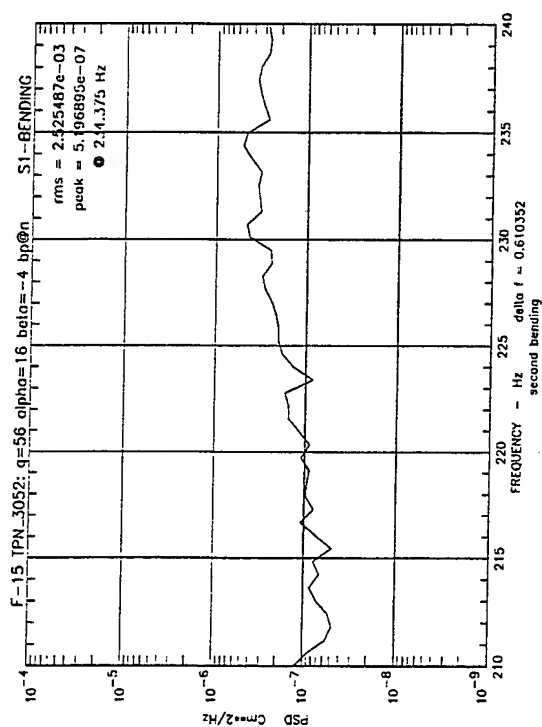
# F-15 Tail Buffet Test



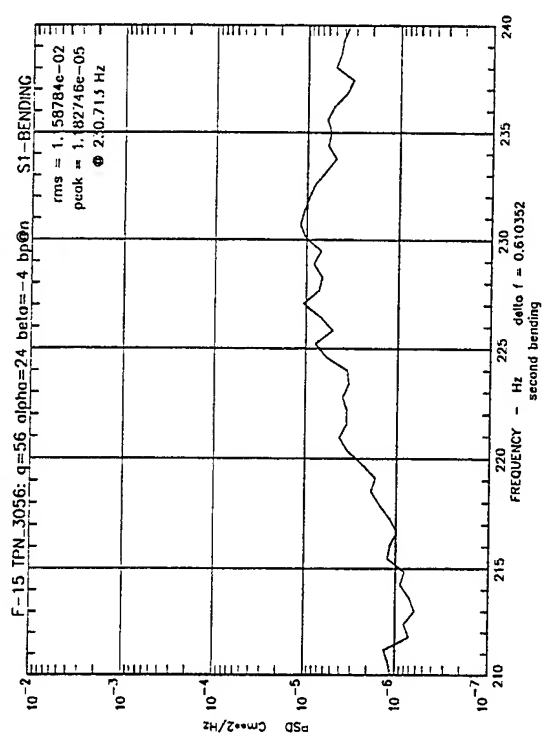
# F-15 Tail Buffet Test

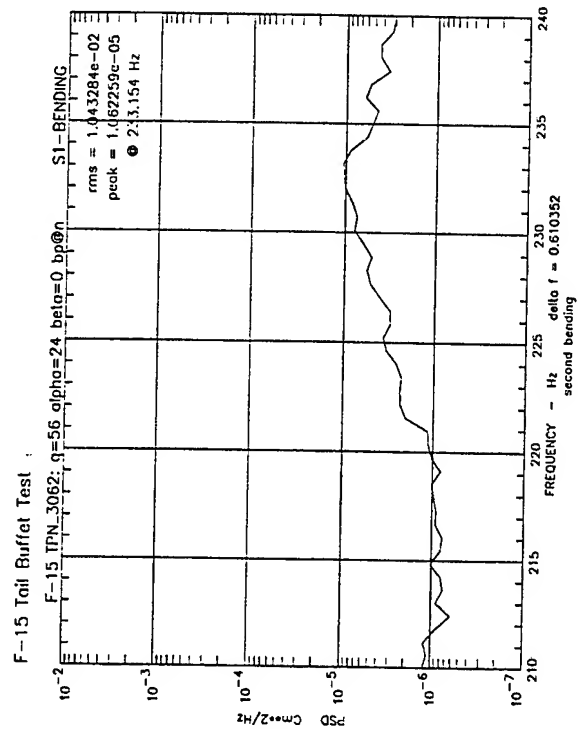
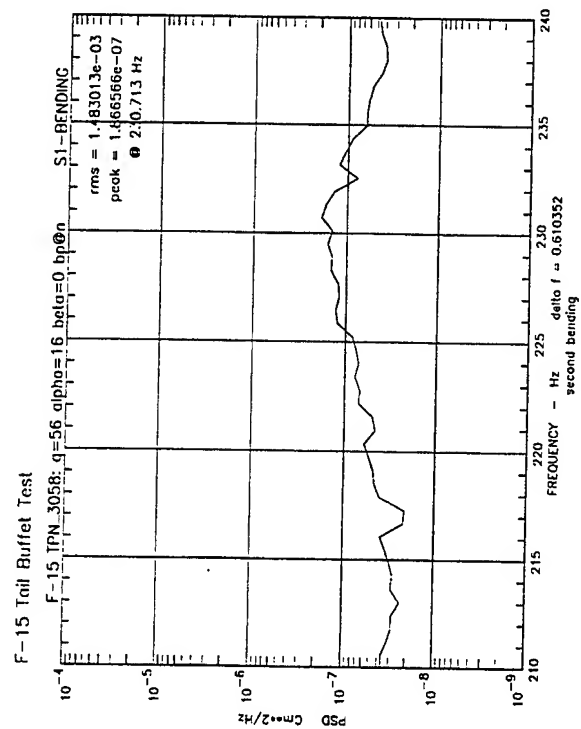
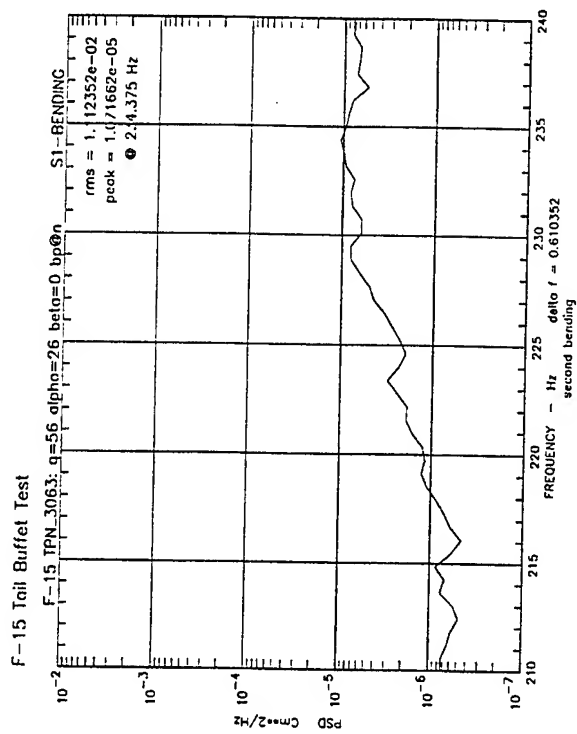
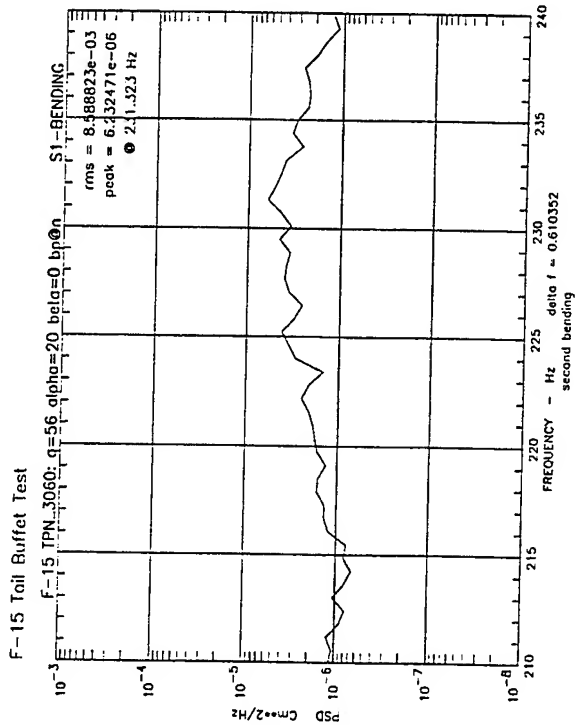


# F-15 Tail Buffet Test

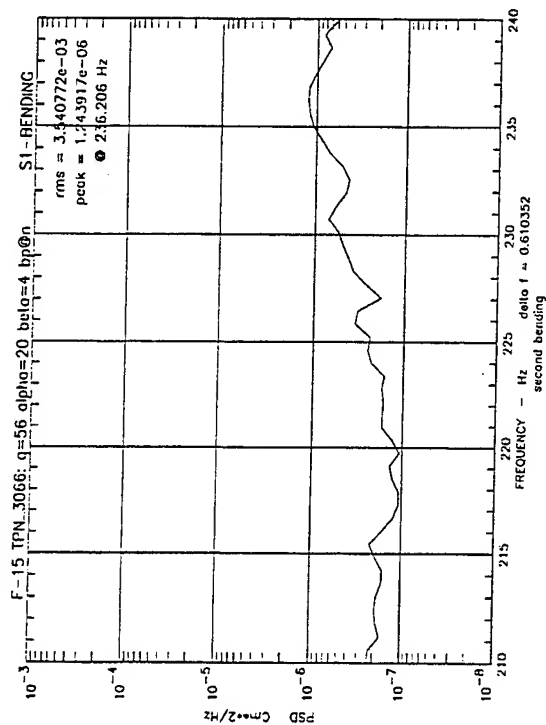


# F-15 Tail Buffet Test

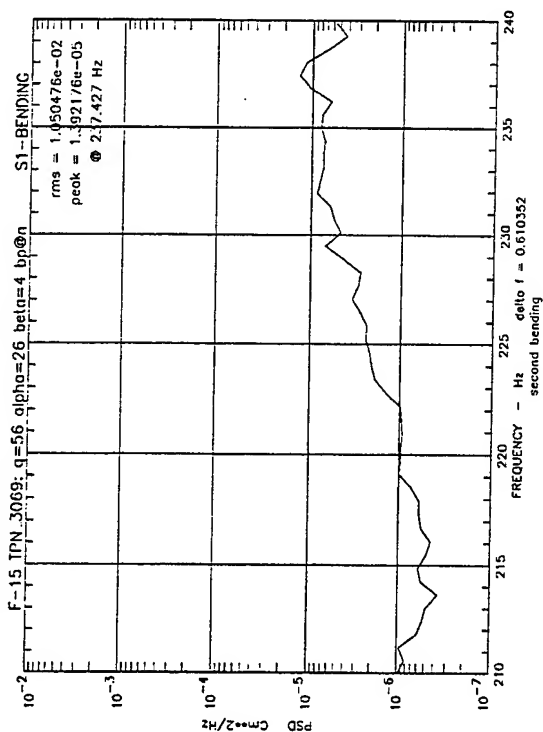




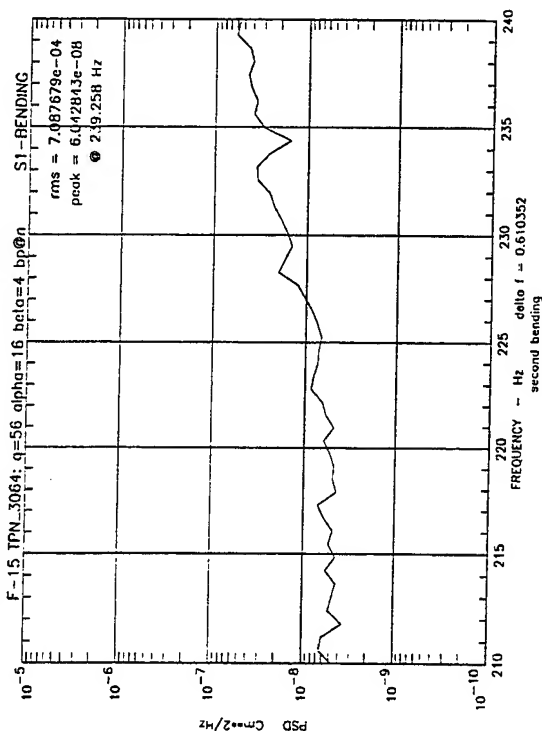
F-15 Tail Buffet Test



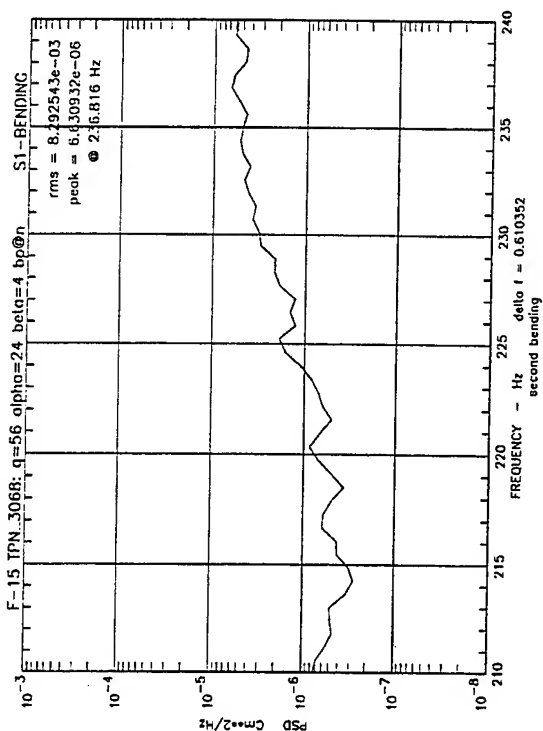
F-15 Tail Buffet Test



F-15 Tail Buffet Test



F-15 Tail Buffet Test

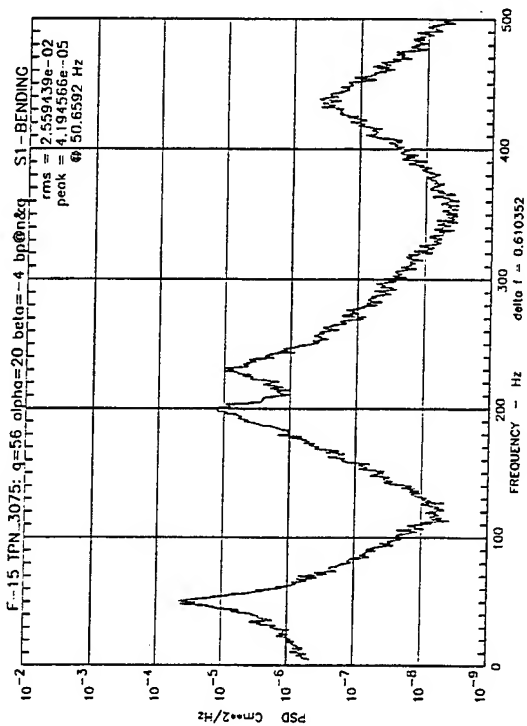


**FLEXIBLE TAIL RESPONSE  
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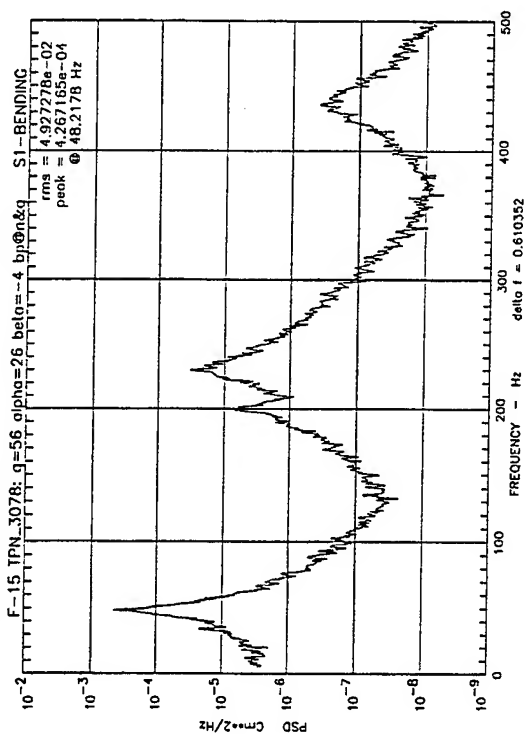
**Q= 56PSF**

**3.1.1.5 NBP = 87 PSI, GBP = 65PSI, BETA = 0, +4, -4 DEG, ALPHA=16....26 DEG**

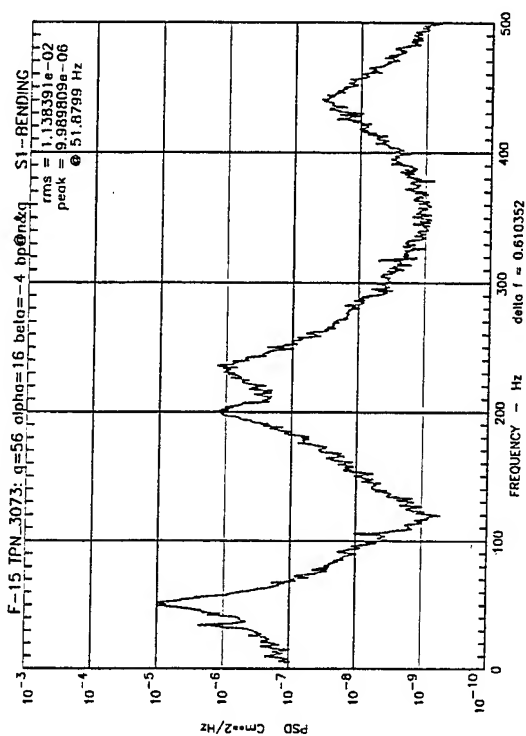
F-15 Tail Buffet Test



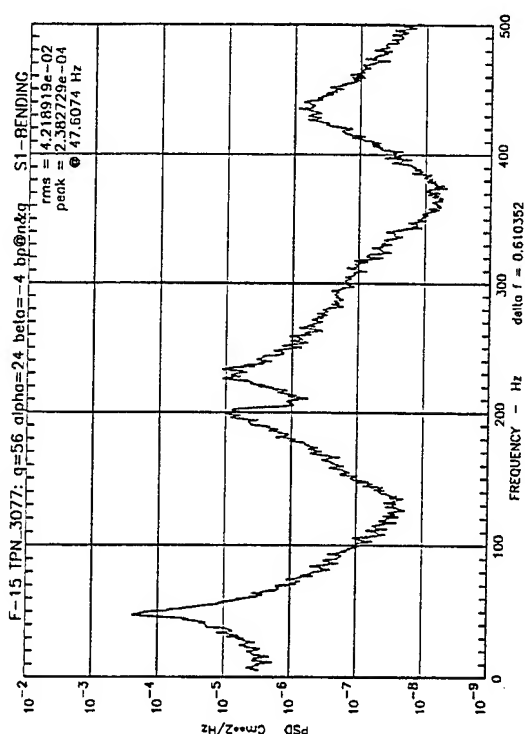
F-15 Tail Buffet Test



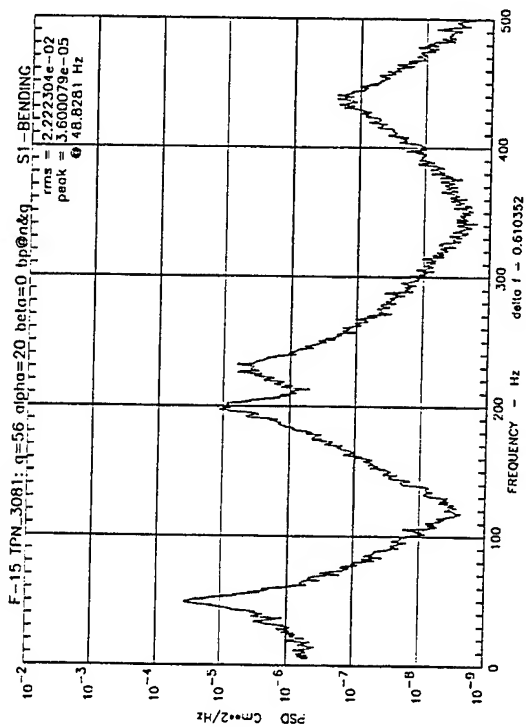
F-15 Tail Buffet Test



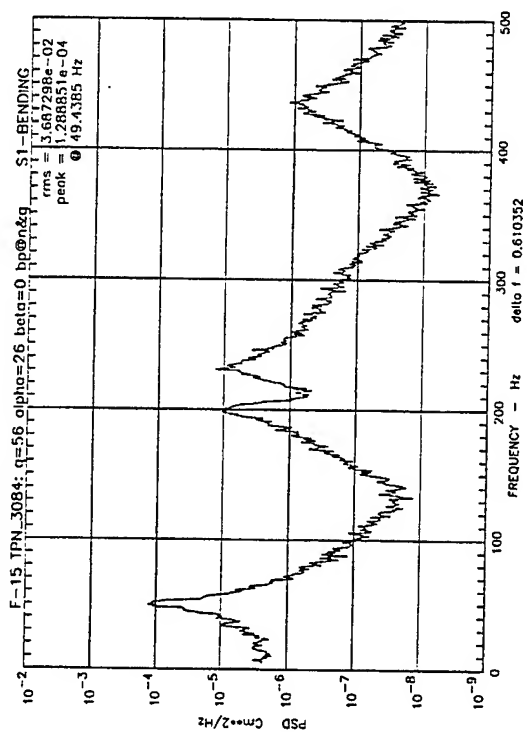
F-15 Tail Buffet Test



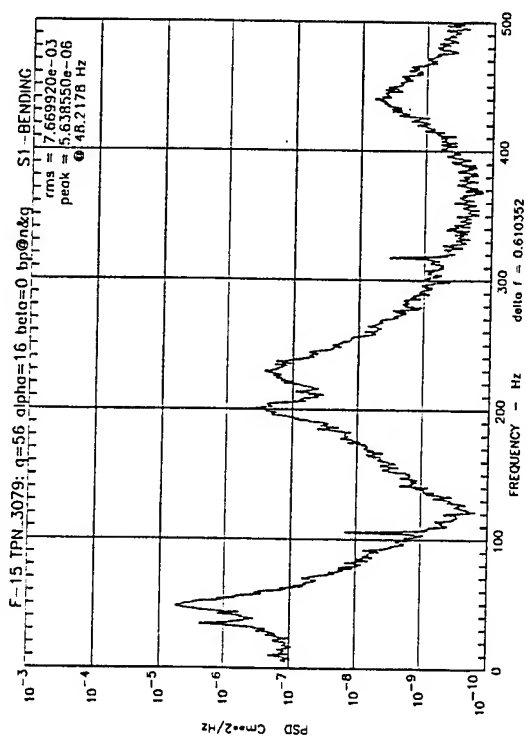
F-15 Tail Buffet Test



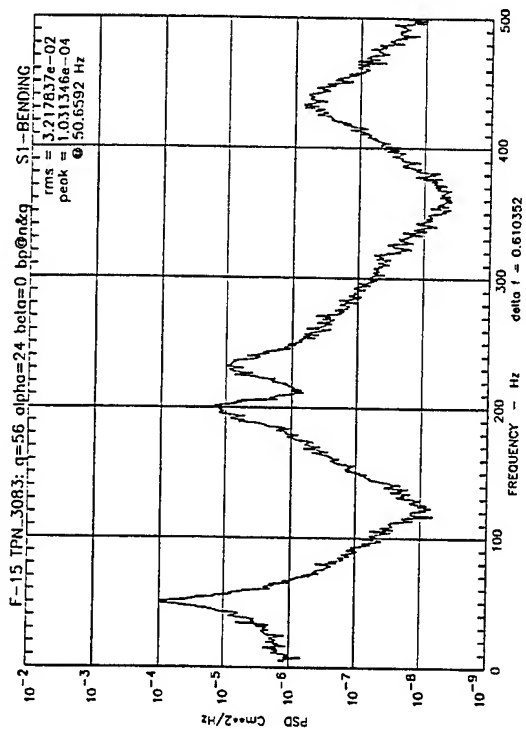
F-15 Tail Buffet Test



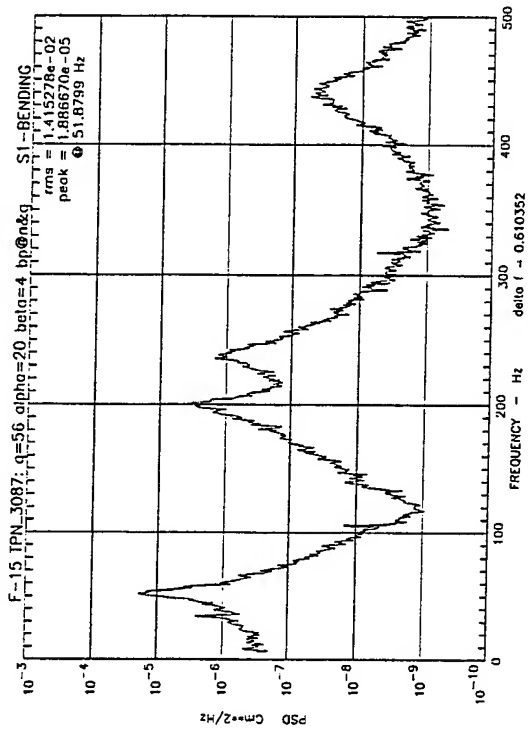
F-15 Tail Buffet Test



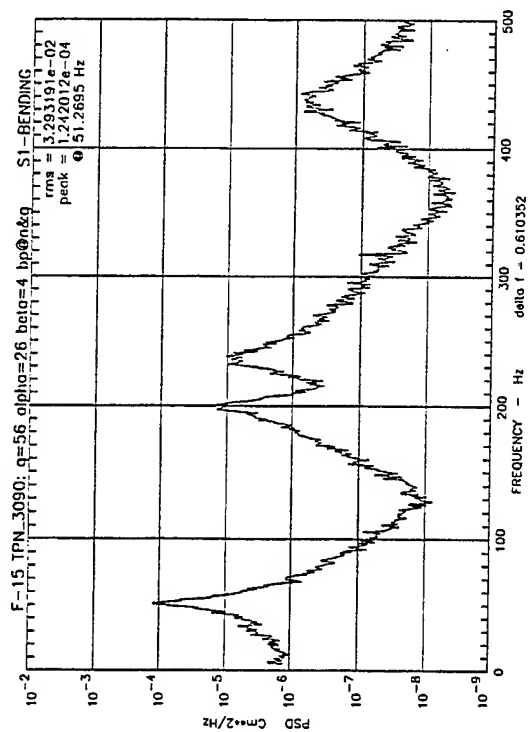
F-15 Tail Buffet Test



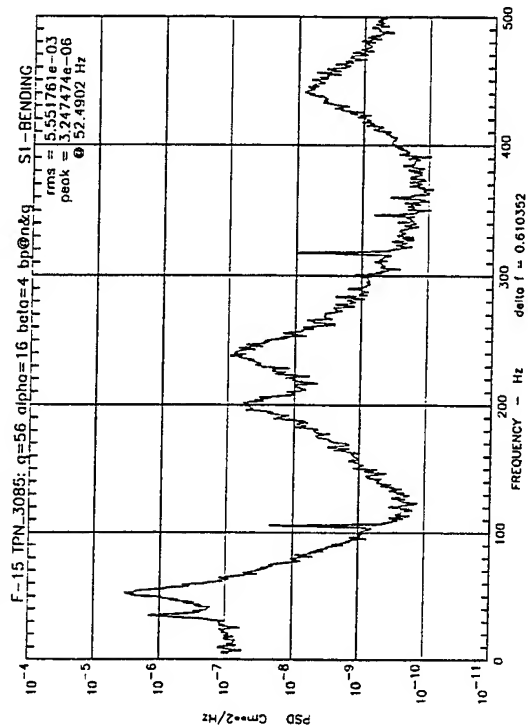
F-15 Tail Buffet Test



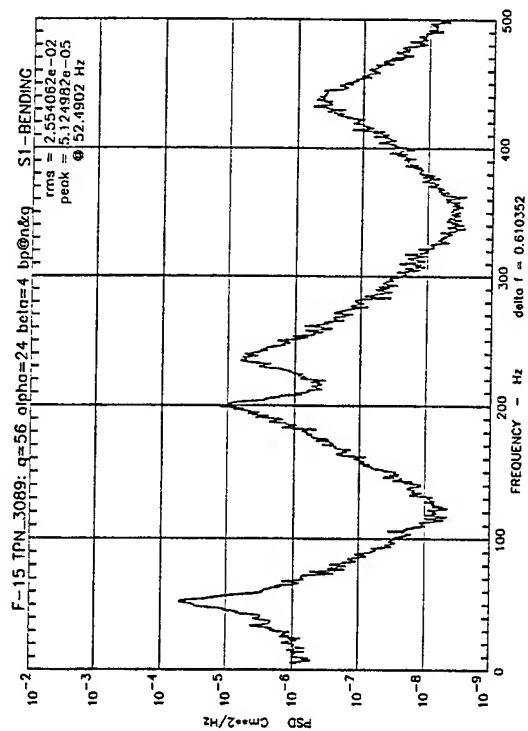
F-15 Tail Buffet Test



F-15 Tail Buffet Test

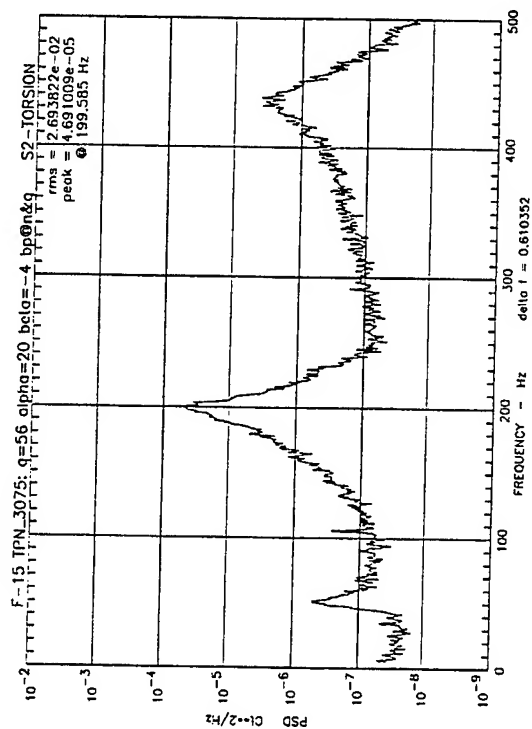


F-15 Tail Buffet Test

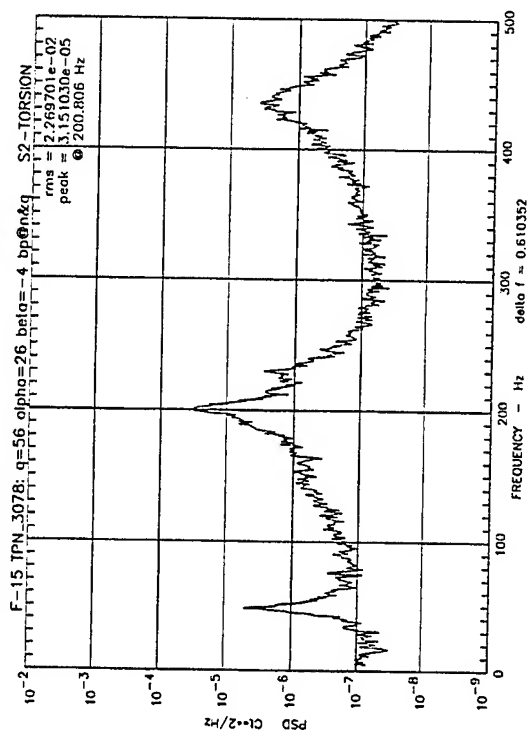




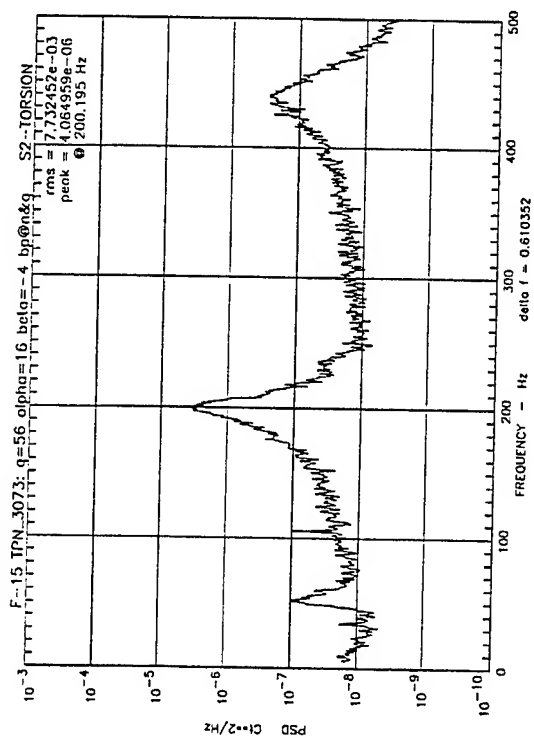
F-15 Tail Buffet Test



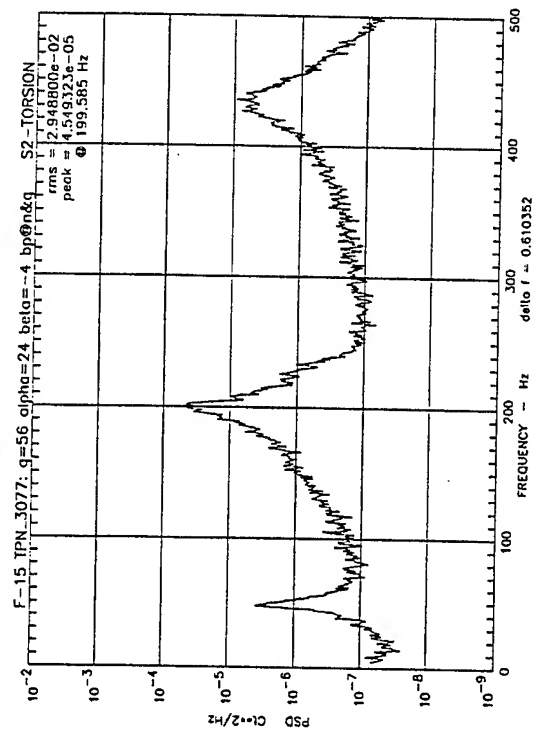
F-15 Tail Buffet Test



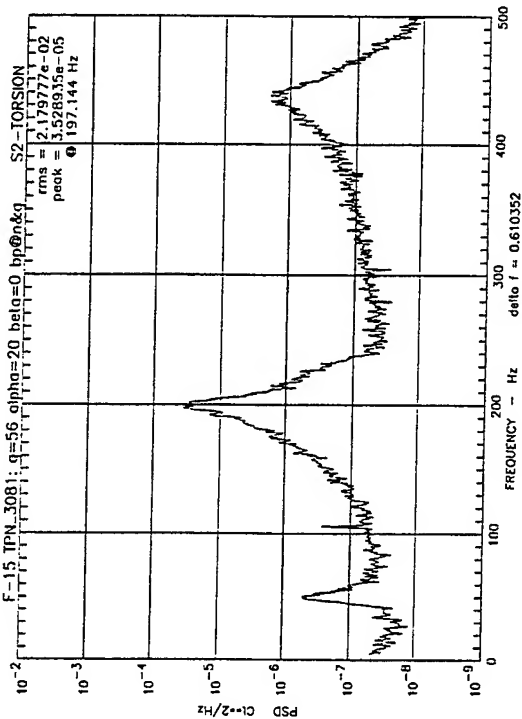
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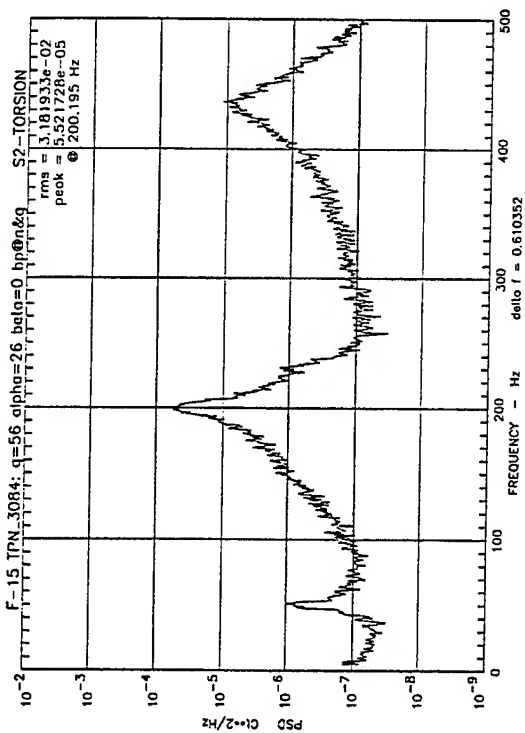
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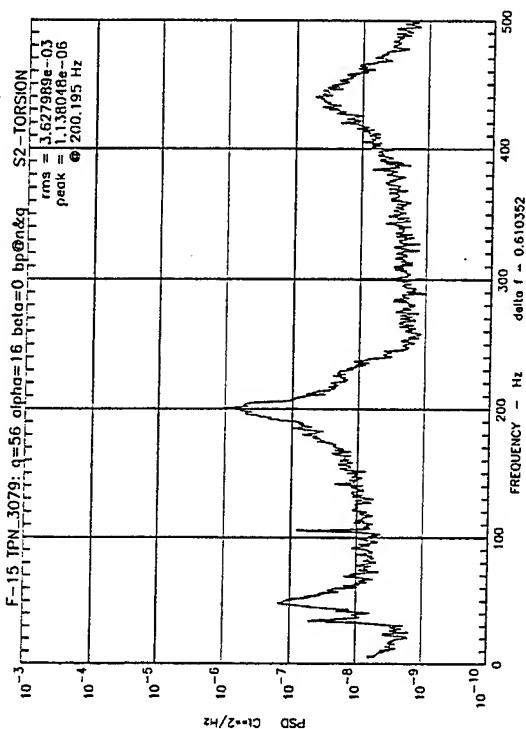
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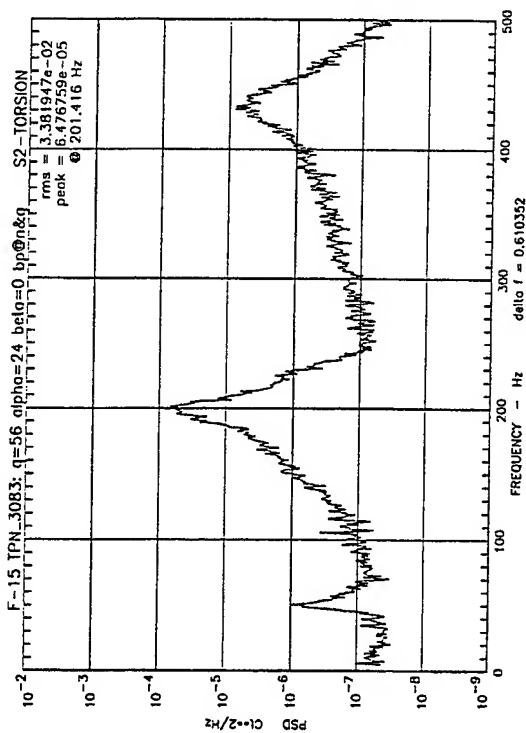
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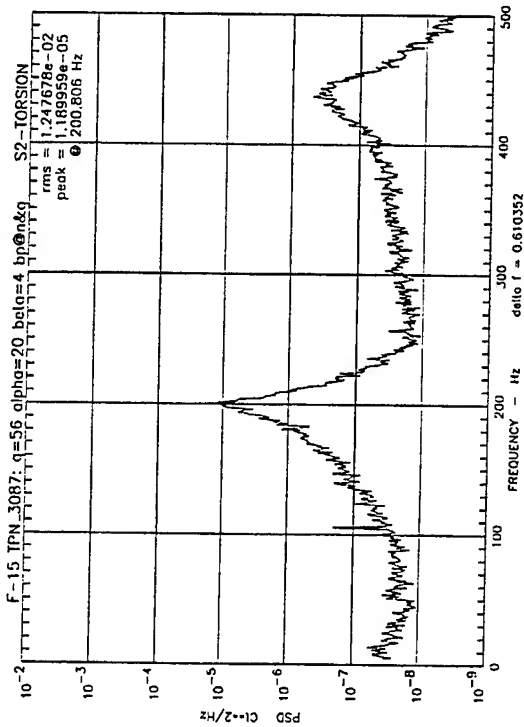
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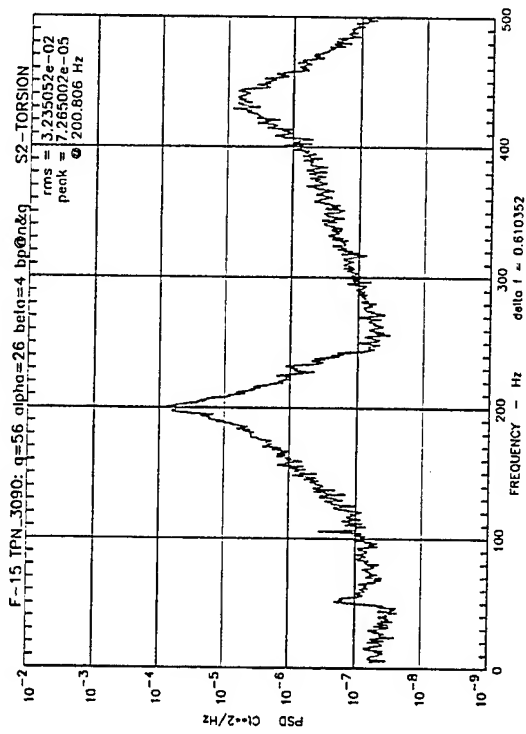
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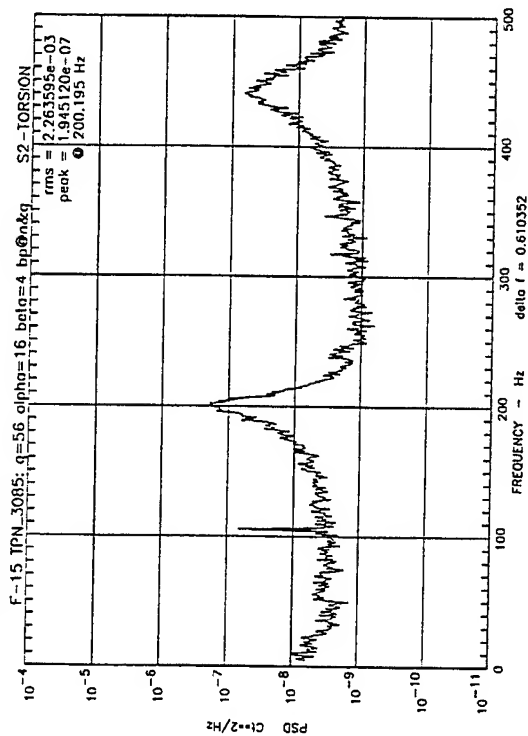
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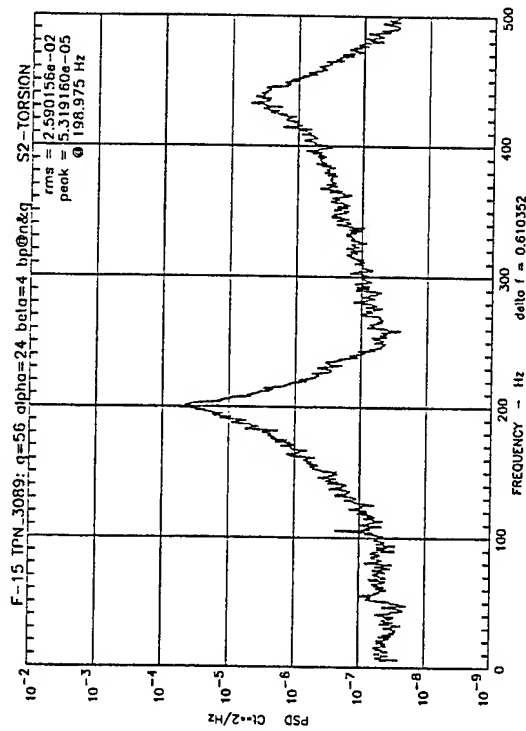
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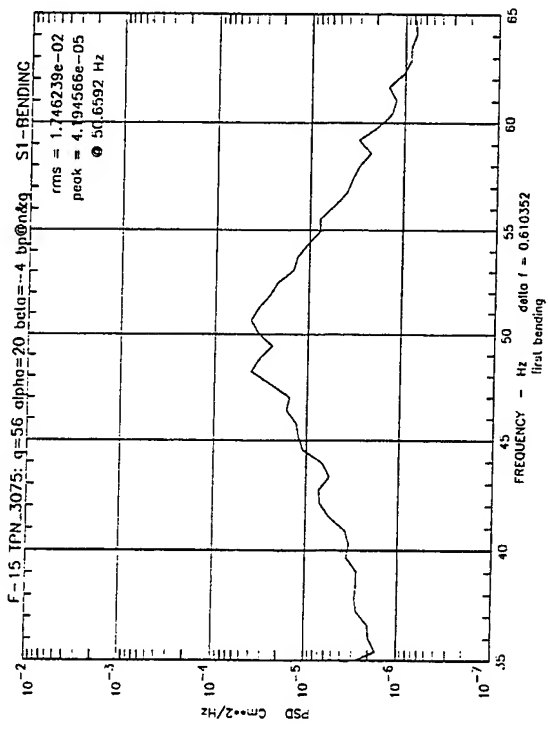
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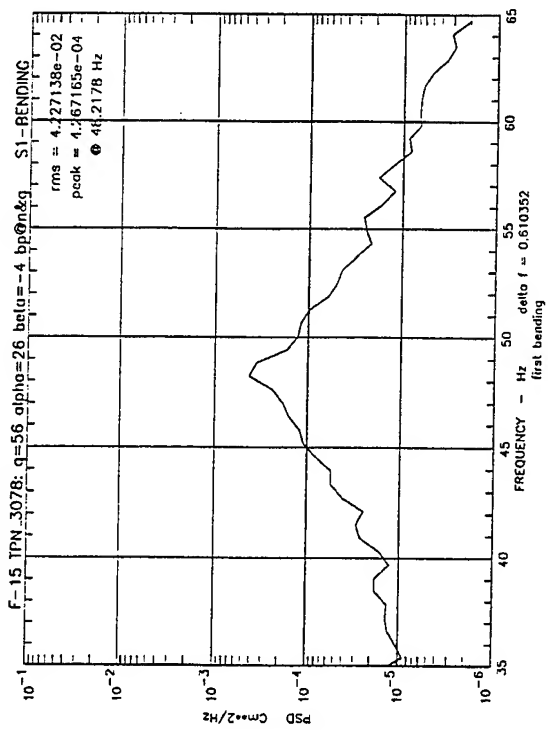
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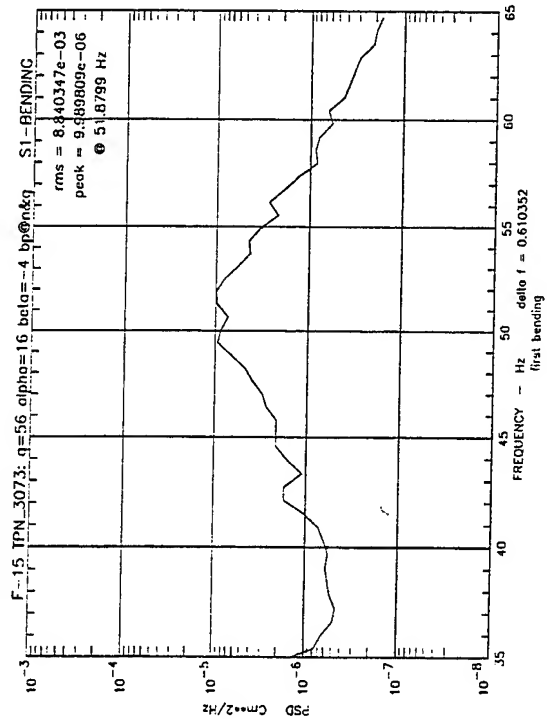
F-15 Tail Buffet Test



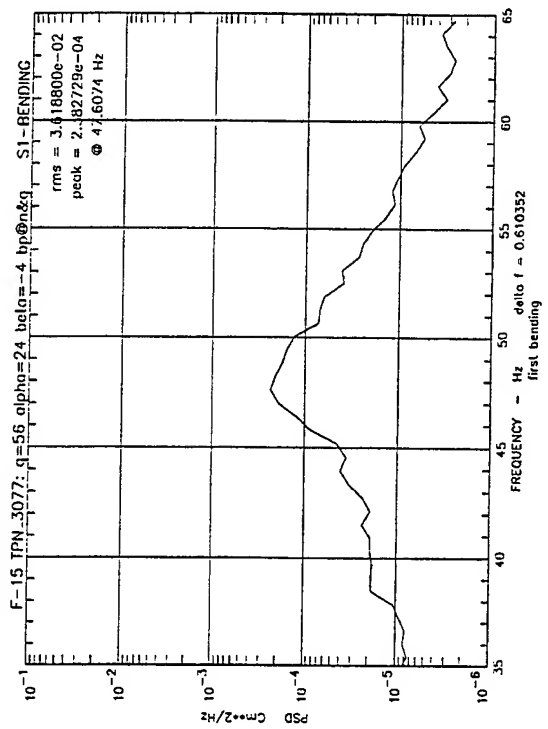
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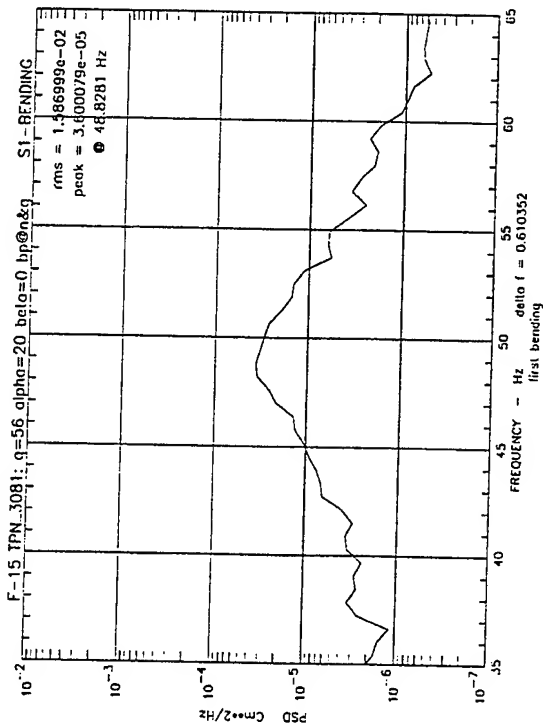
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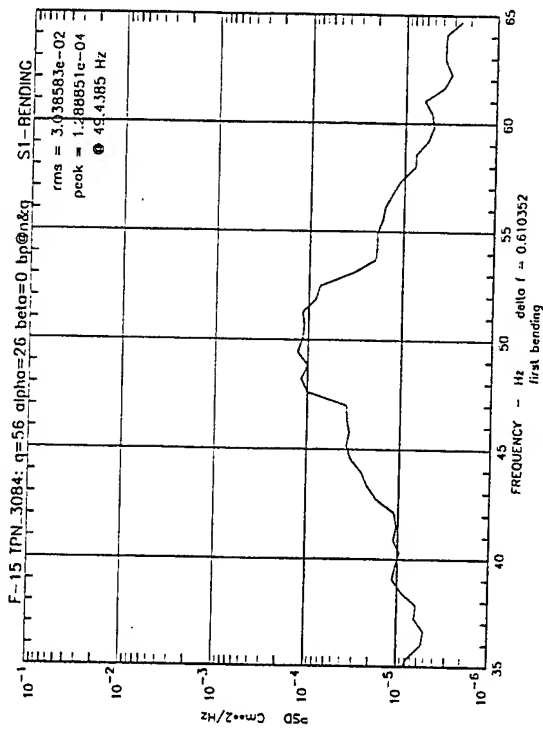
F-15 Tail Buffet Test



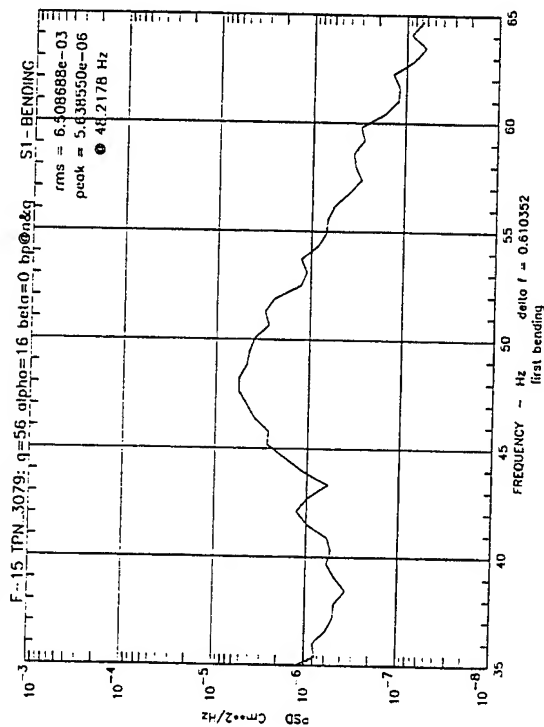
# F-15 Tail Buffet Test



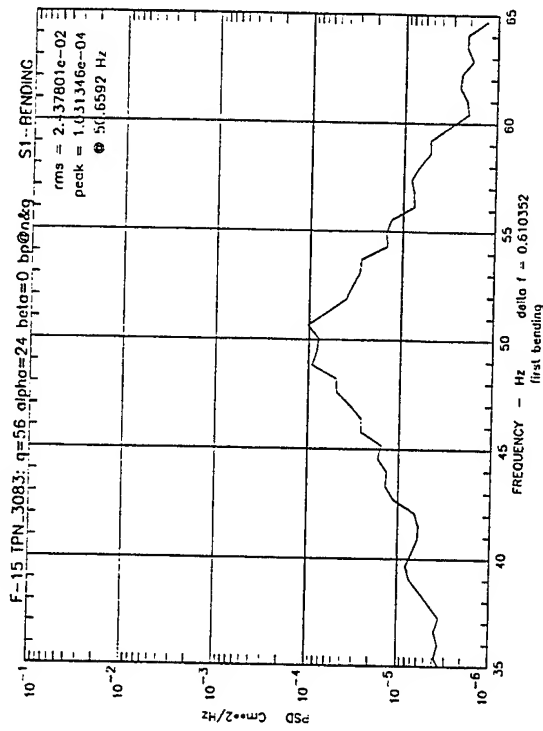
# F-15 Tail Buffet Test



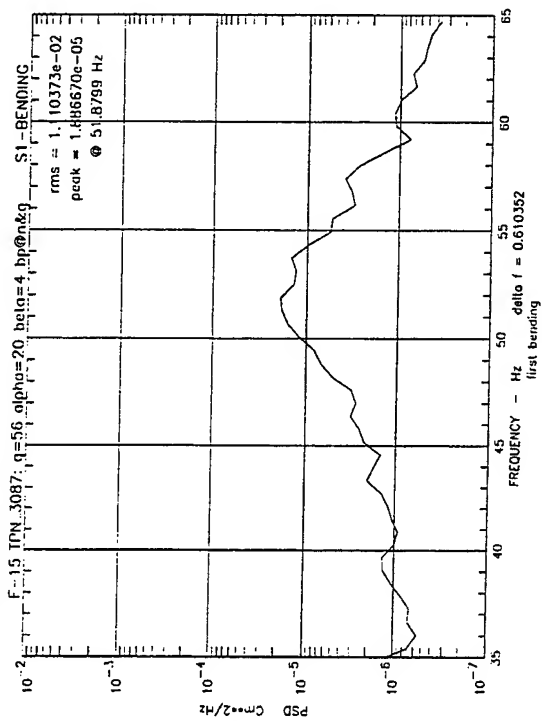
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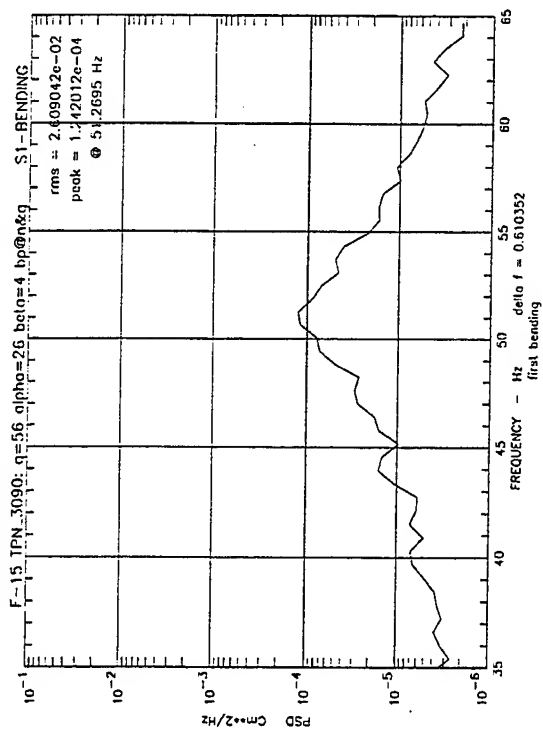
# F-15 Tail Buffet Test



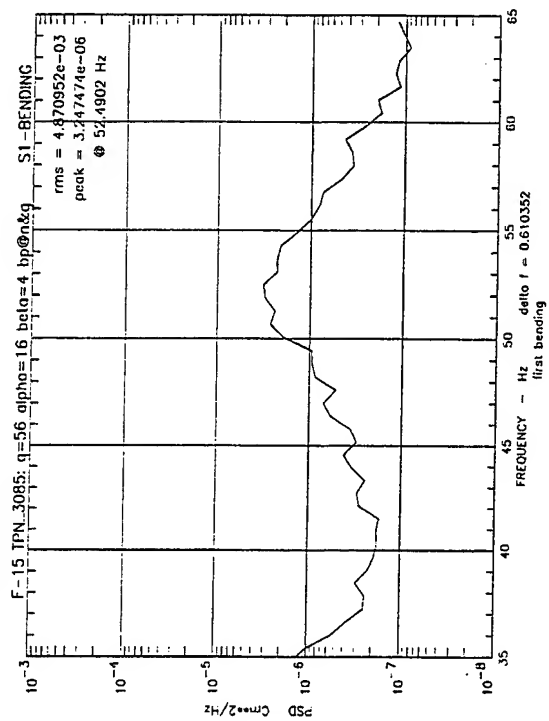
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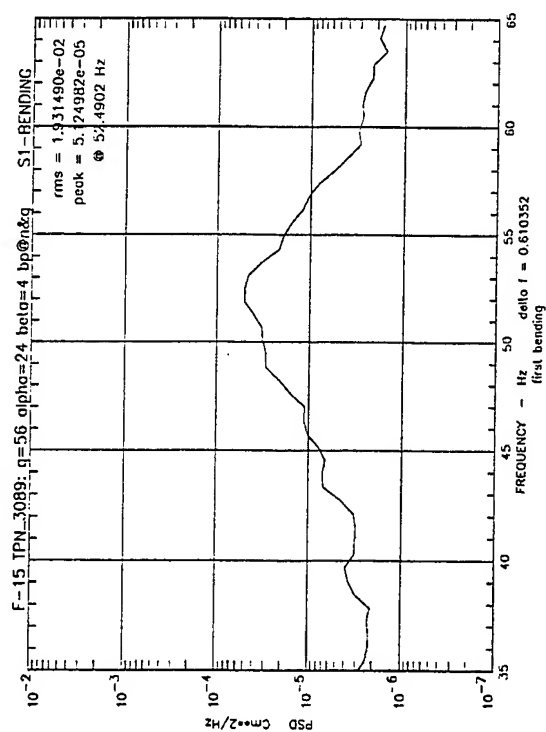
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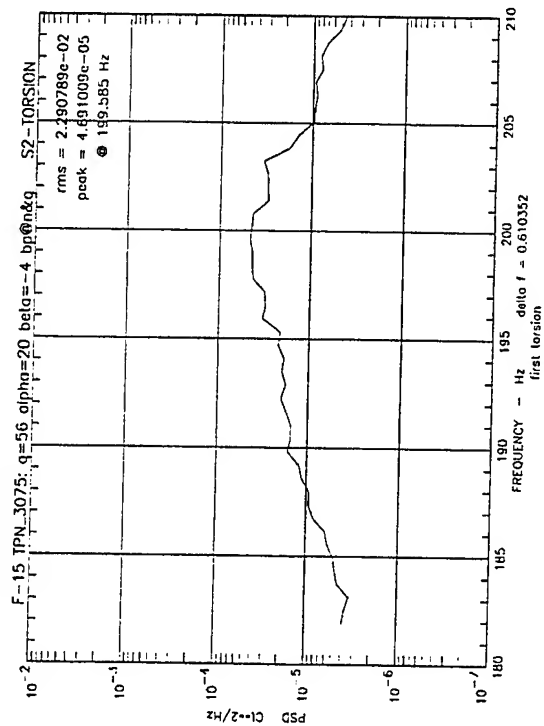
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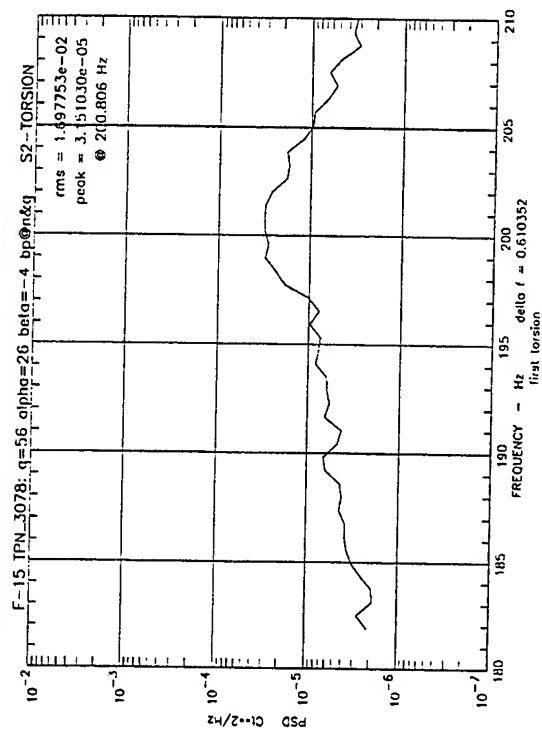
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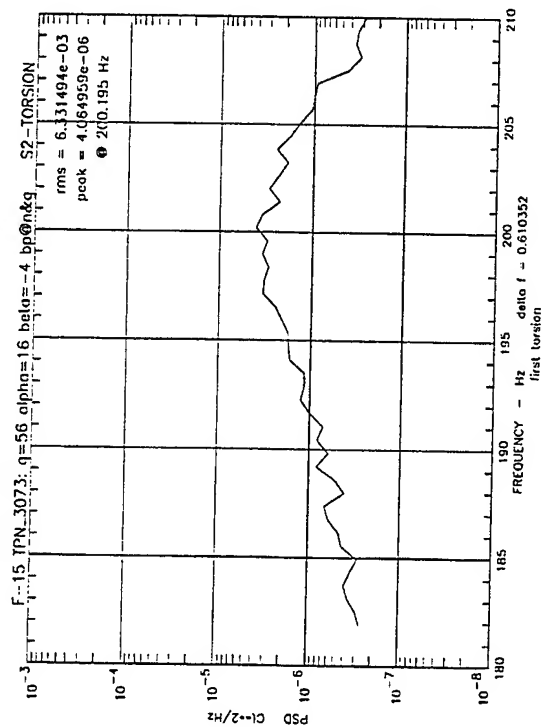
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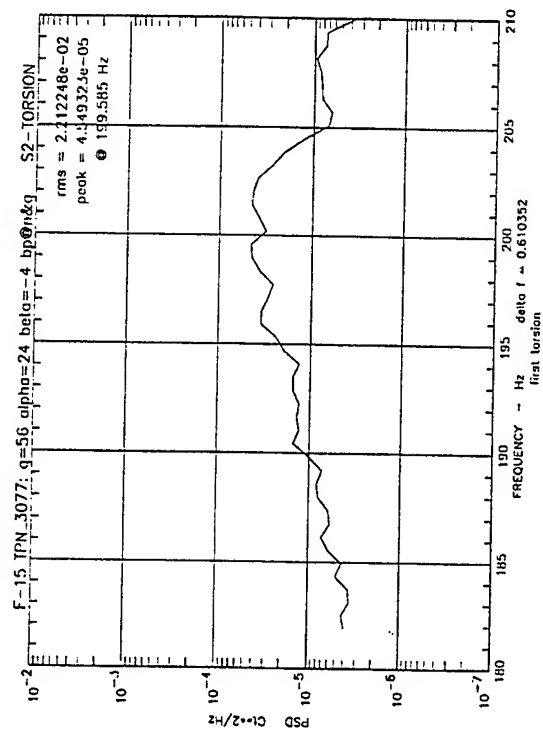
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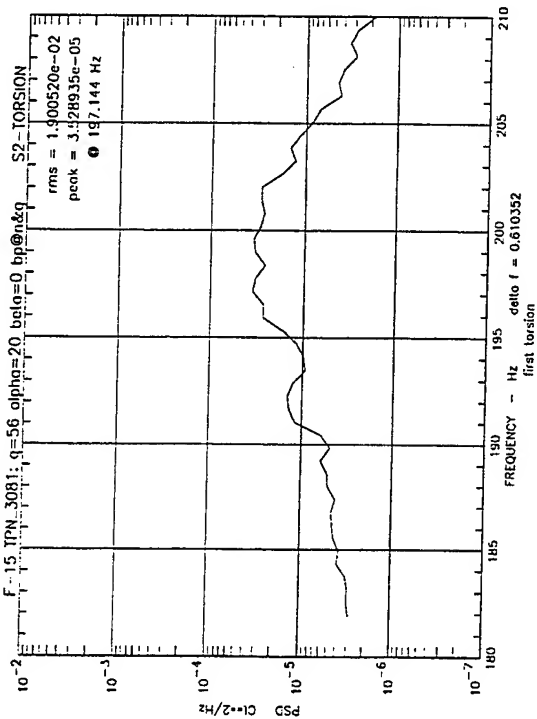
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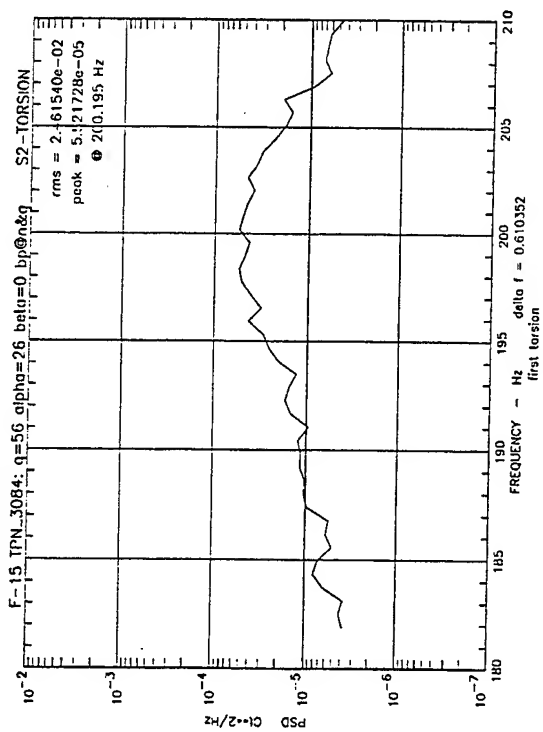
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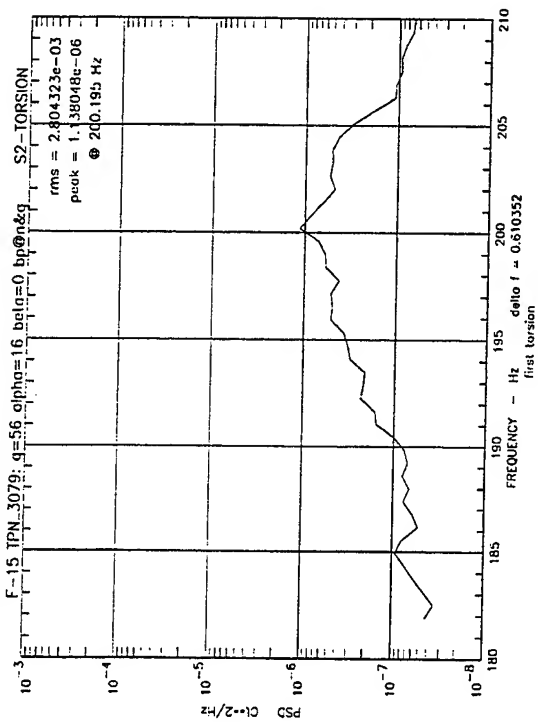
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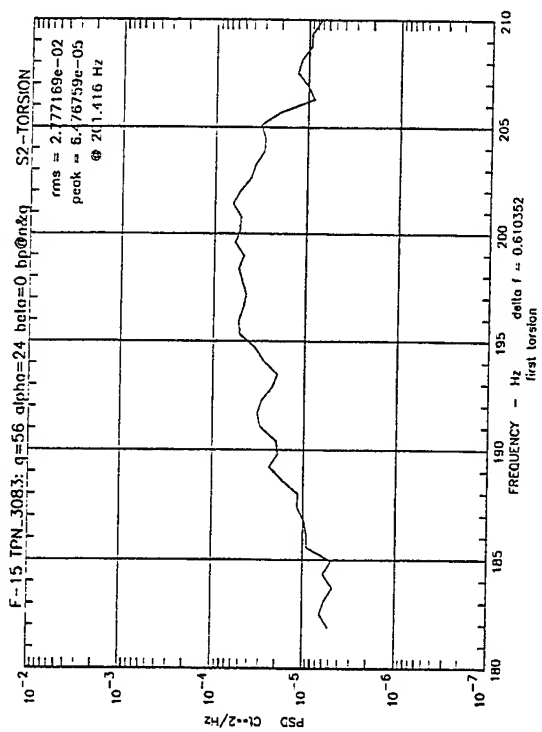
F-15 Tail Buffet Test



F-15 Tail Buffet Test

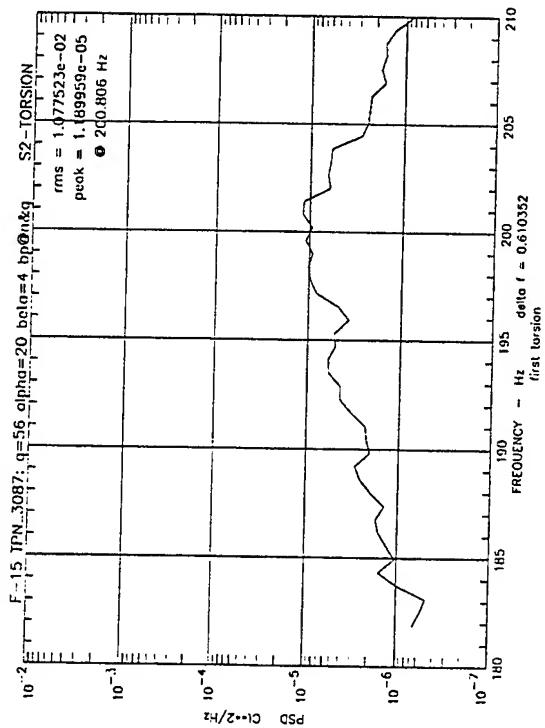


F-15 Tail Buffet Test

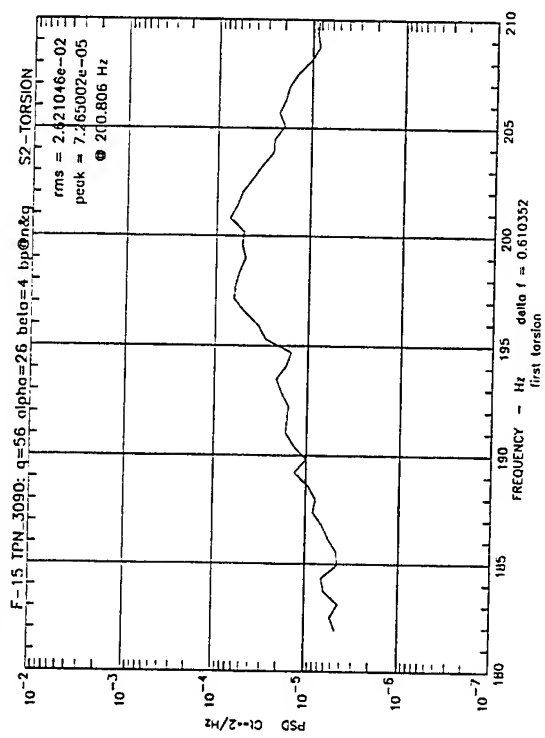




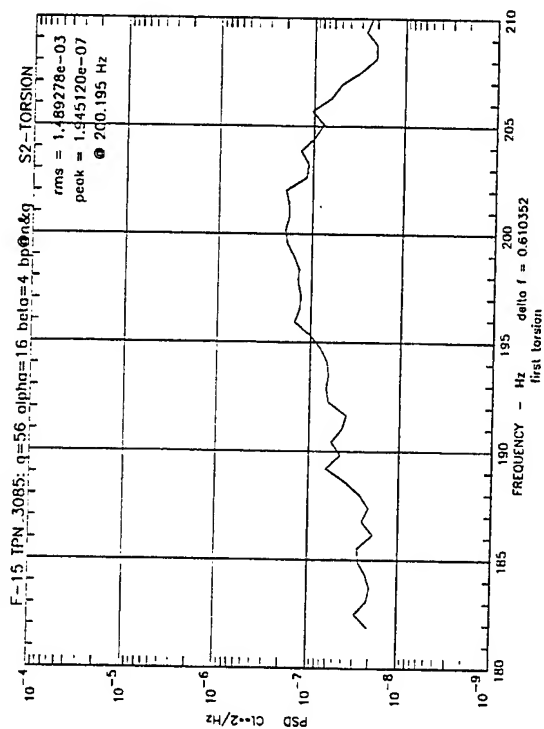
F-15 Tail Buffet Test



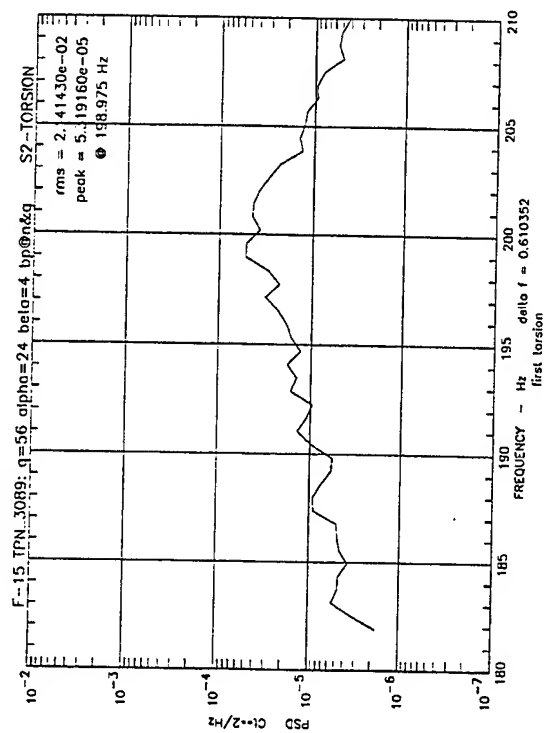
F-15 Tail Buffet Test



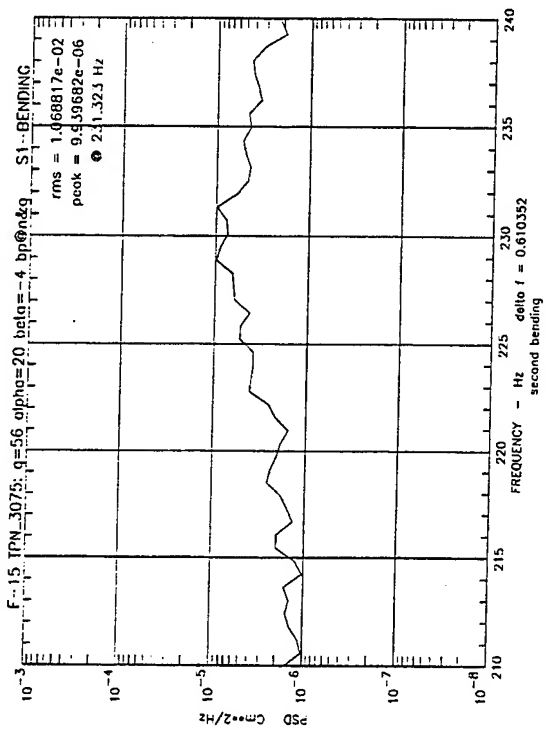
F-15 Tail Buffet Test



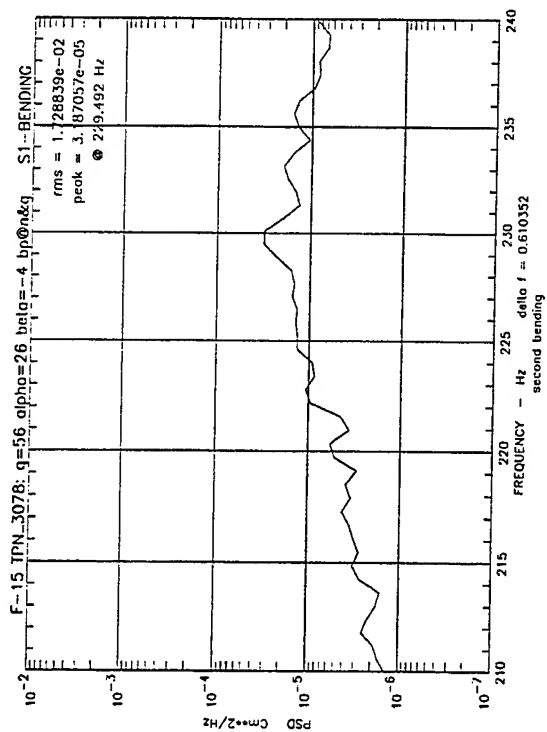
F-15 Tail Buffet Test



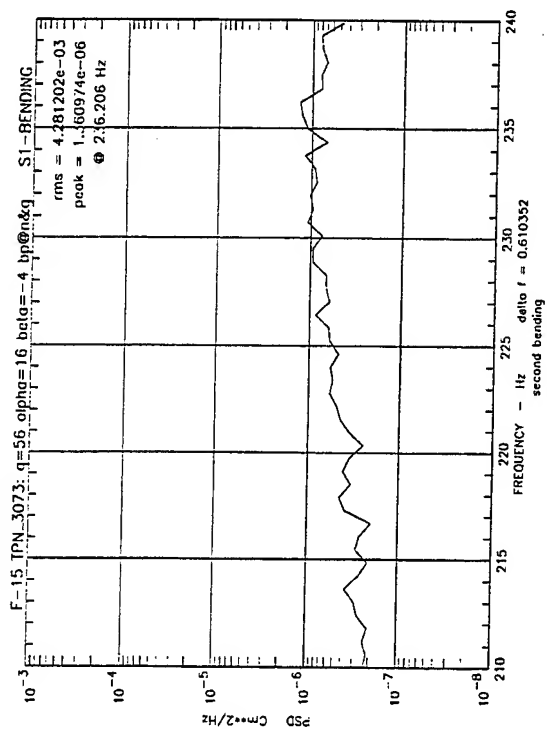
F-15 Tail Buffet Test



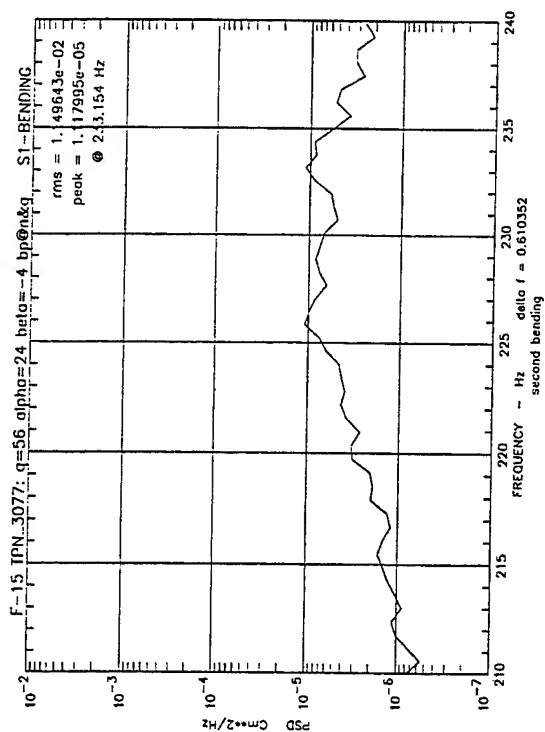
F-15 Tail Buffet Test



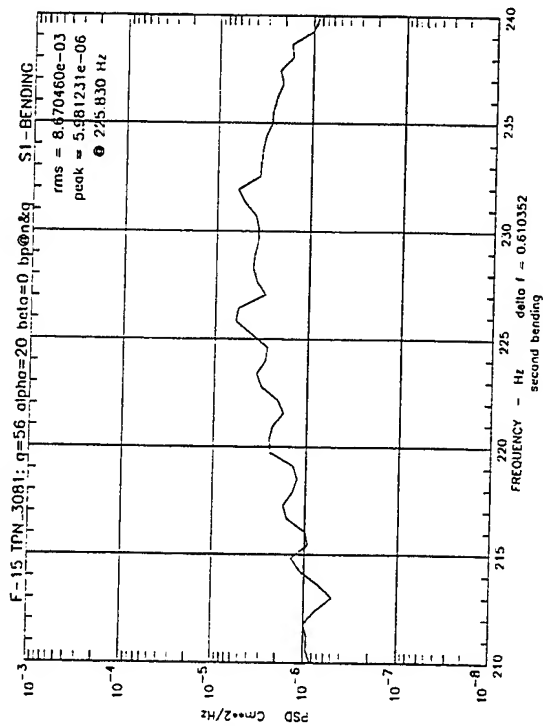
F-15 Tail Buffet Test



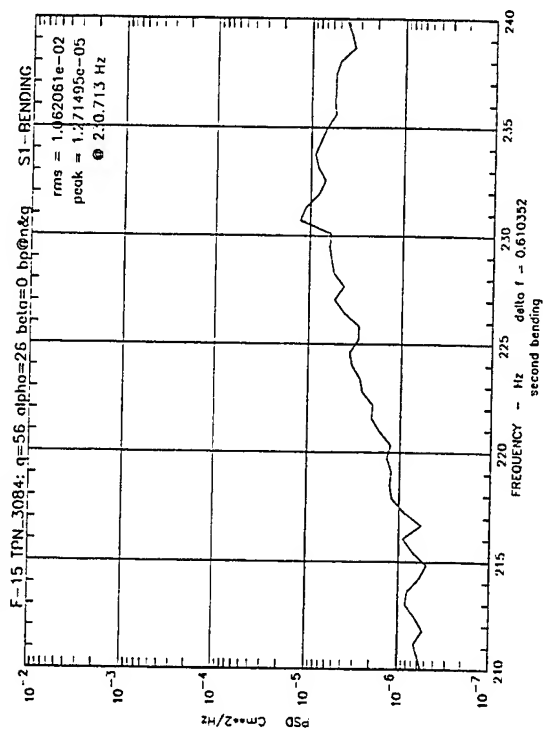
F-15 Tail Buffet Test



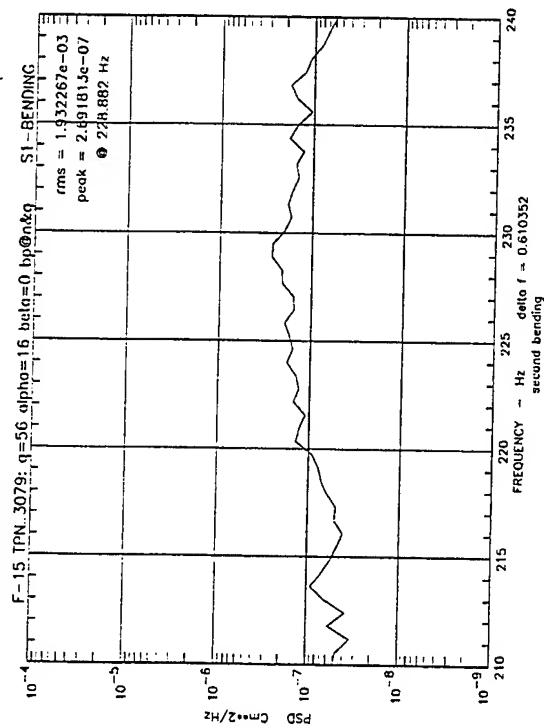
# F-15 Tail Buffet Test



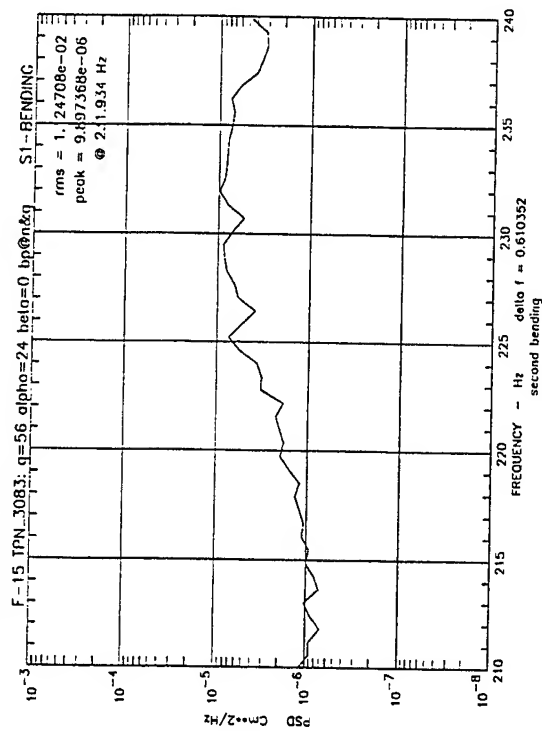
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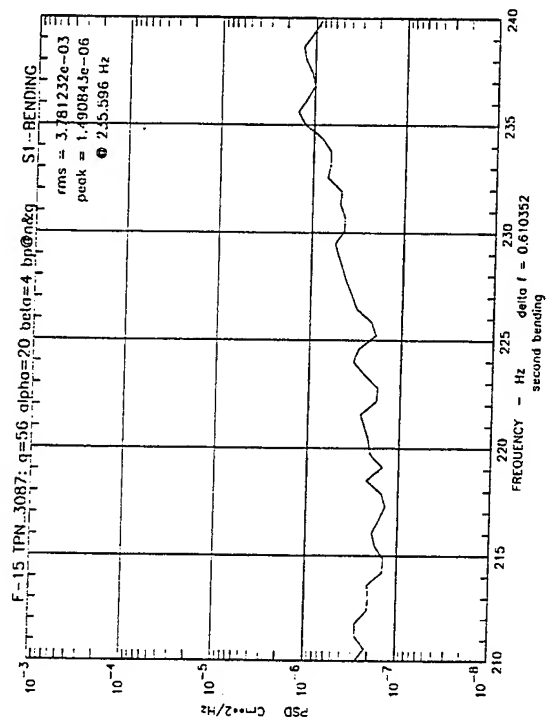
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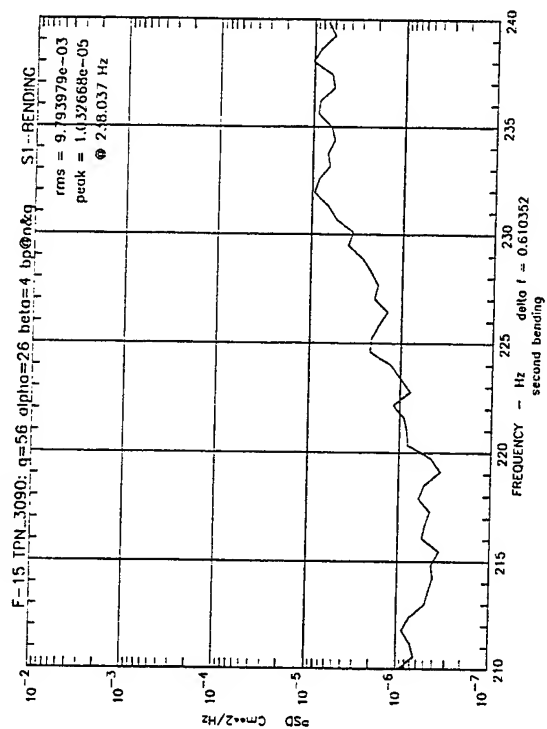
# F-15 Tail Buffet Test



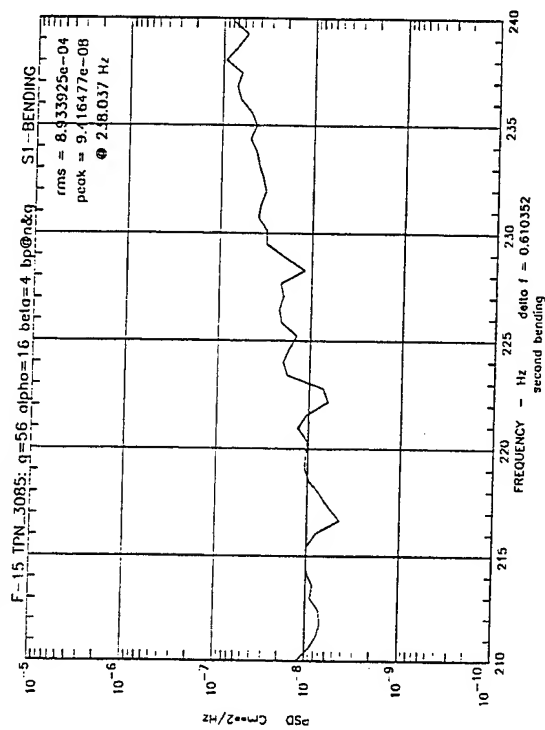
F-15 Tail Buffet Test



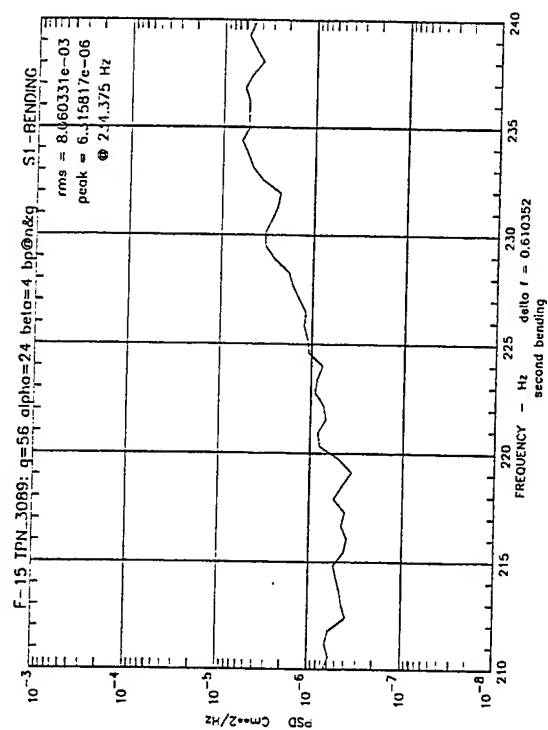
F-15 Tail Buffet Test



F-15 Tail Buffet Test



F-15 Tail Buffet Test

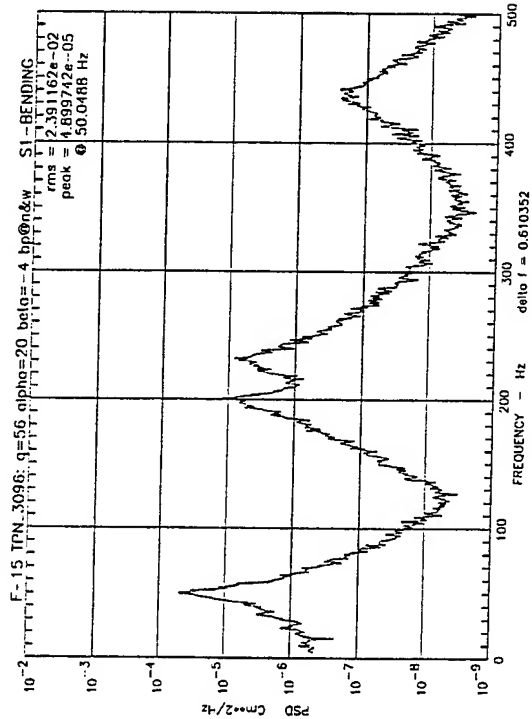


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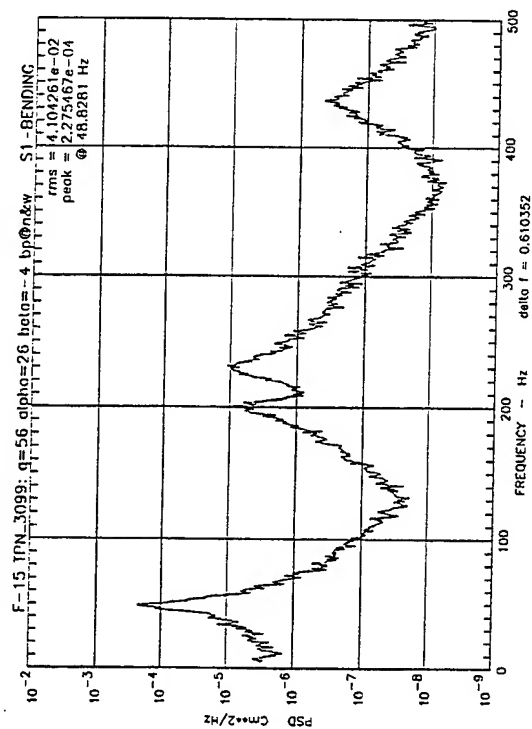
**Q= 56PSF**

**3.1.1.6 NBP = 87 PSI, WBP = 65PSI, BETA = 0, +4, -4 DEG, ALPHA=16....26 DEG**

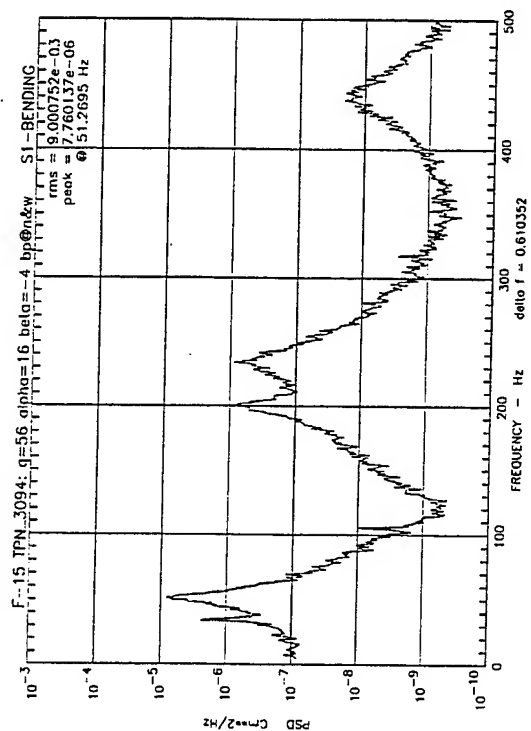
F-15 Tail Buffet Test



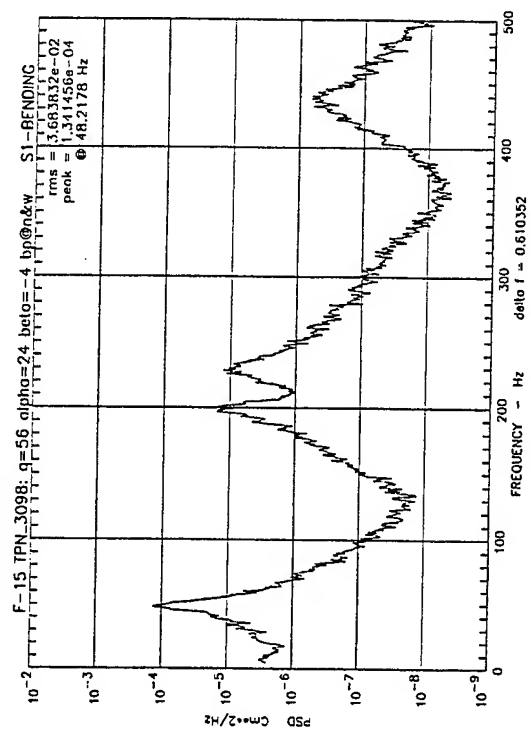
F-15 Tail Buffet Test



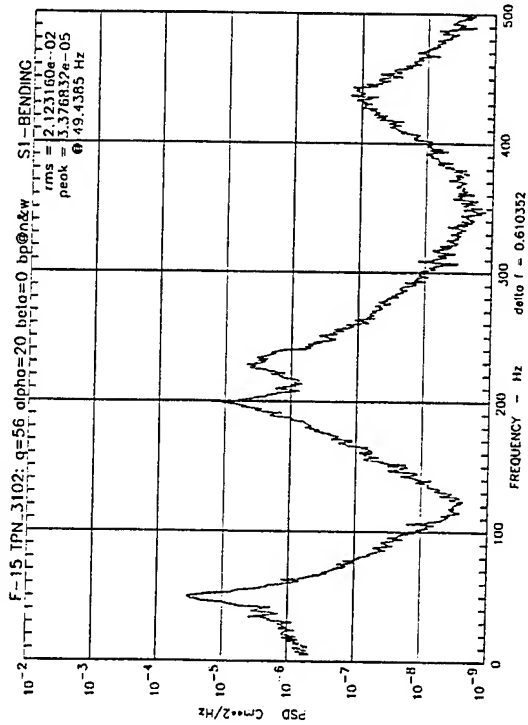
F-15 Tail Buffet Test



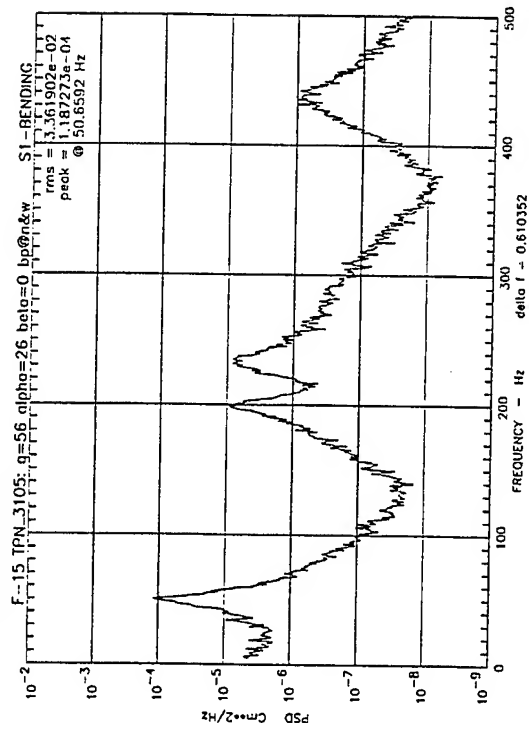
F-15 Tail Buffet Test



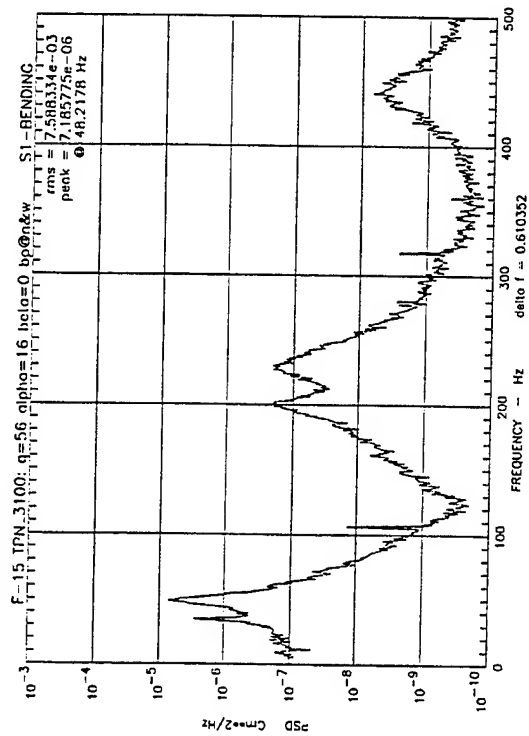
# F-15 Tail Buffet Test



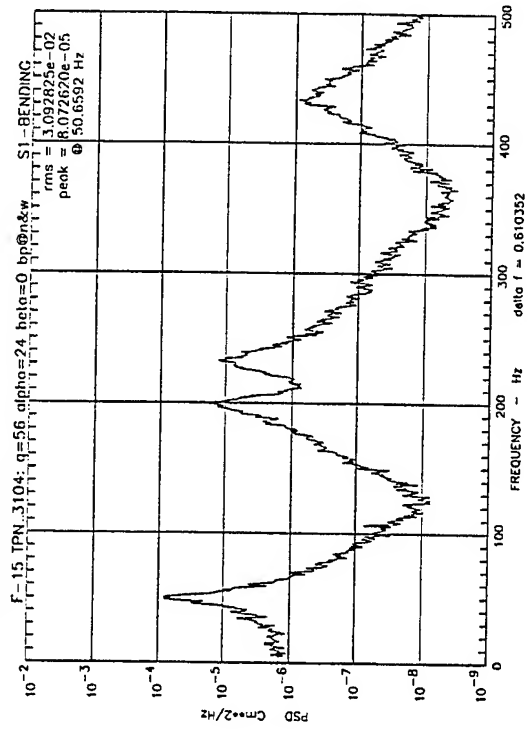
# F-15 Tail Buffet Test



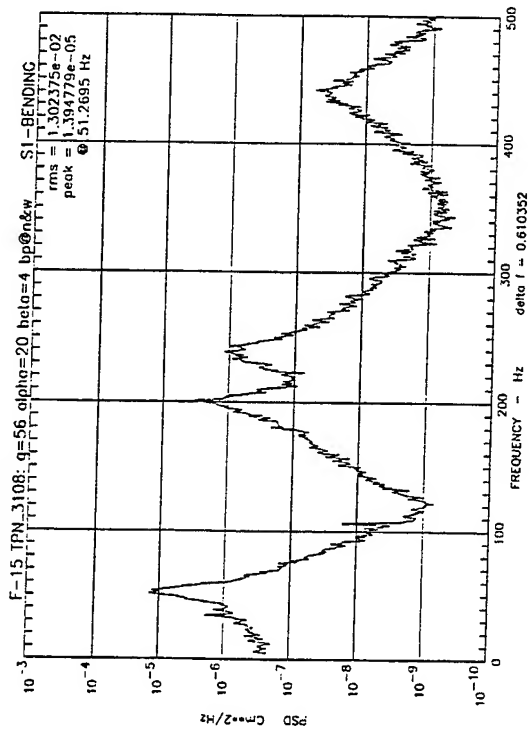
# F-15 Tail Buffet Test



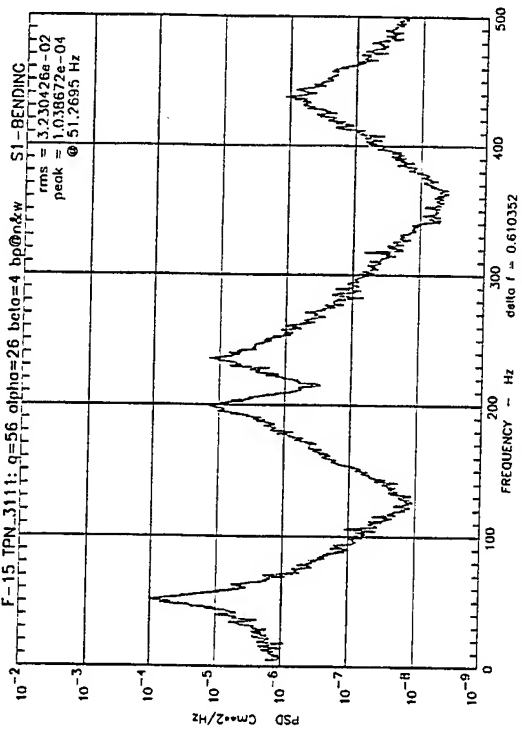
# F-15 Tail Buffet Test



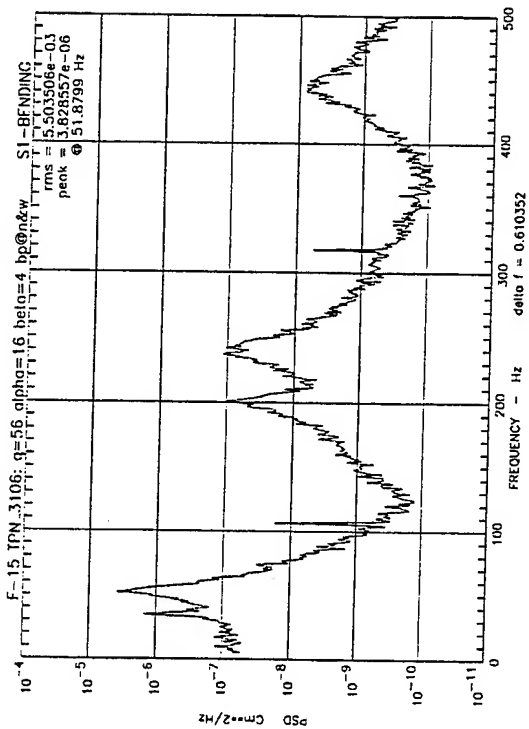
F-15 Tail Buffet Test



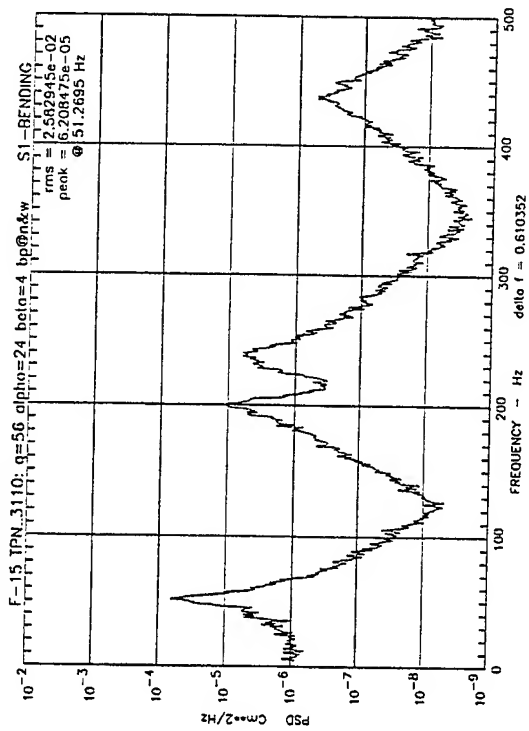
F-15 Tail Buffet Test



F-15 Tail Buffet Test

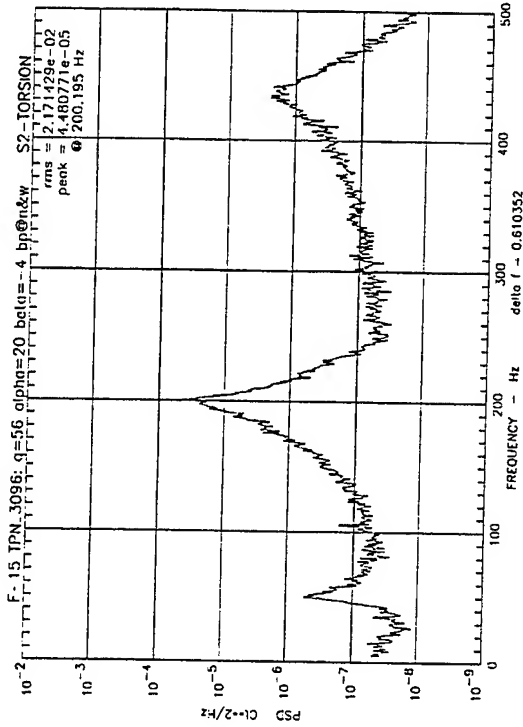


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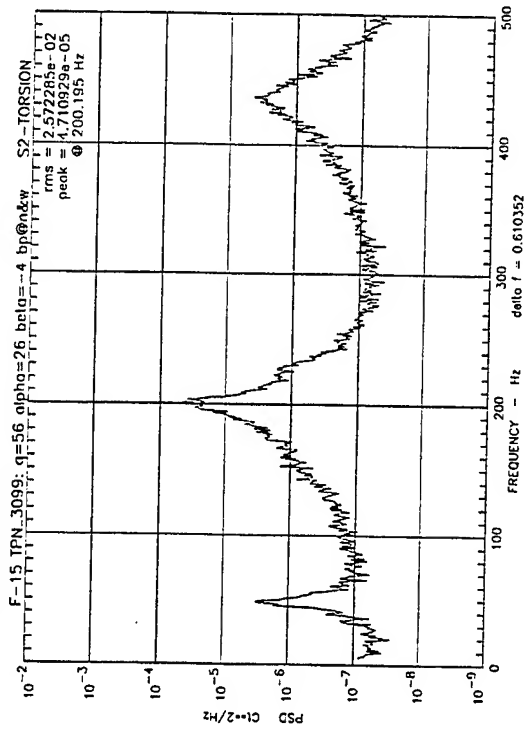




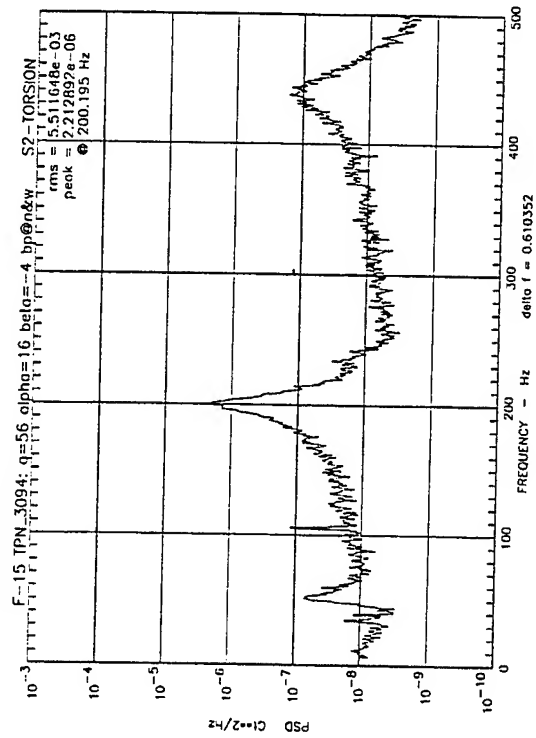
F-15 Tail Buffet Test



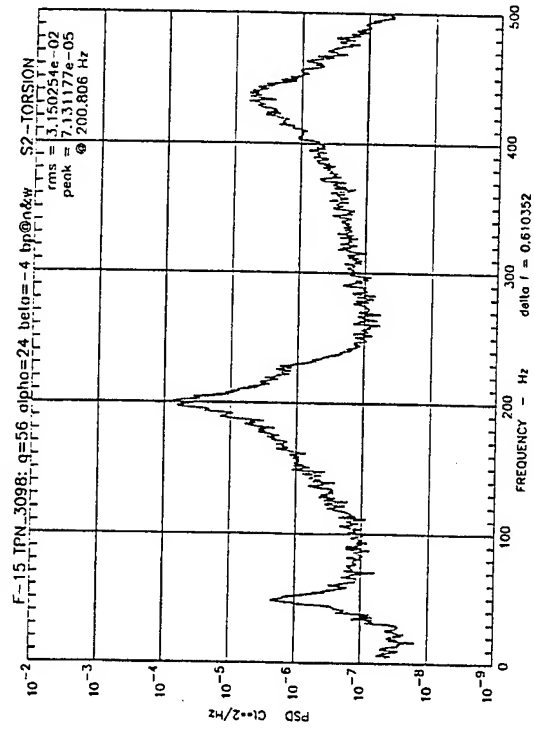
F-15 Tail Buffet Test



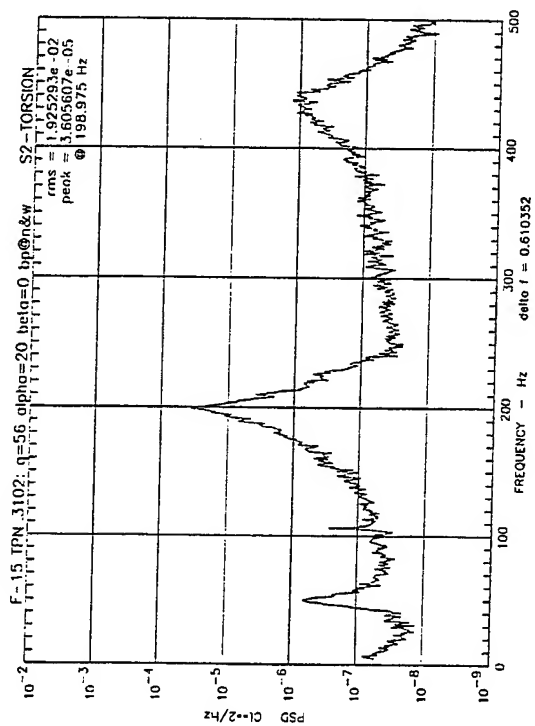
F-15 Tail Buffet Test



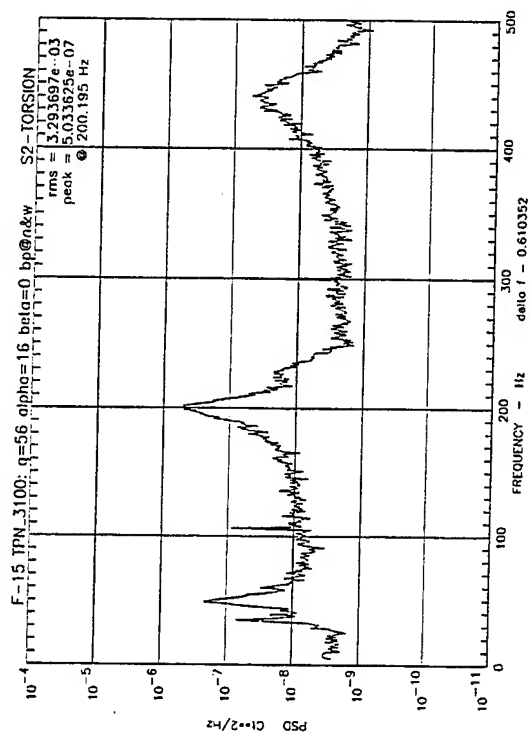
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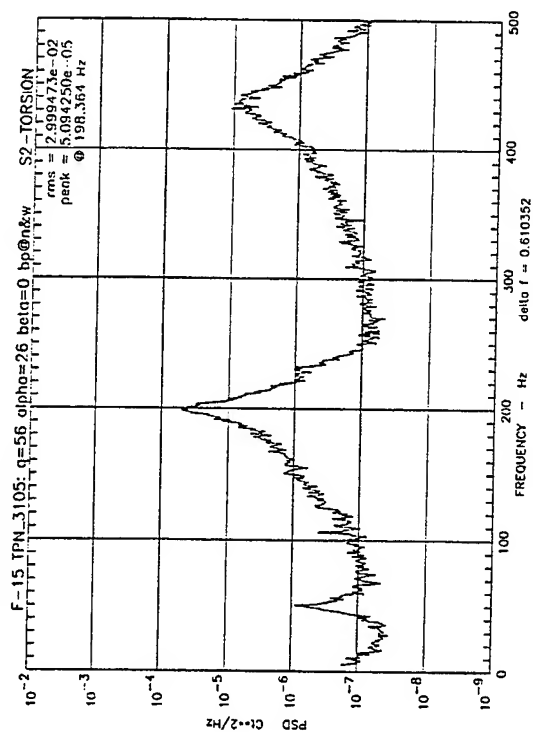
F-15 Tail Buffet Test



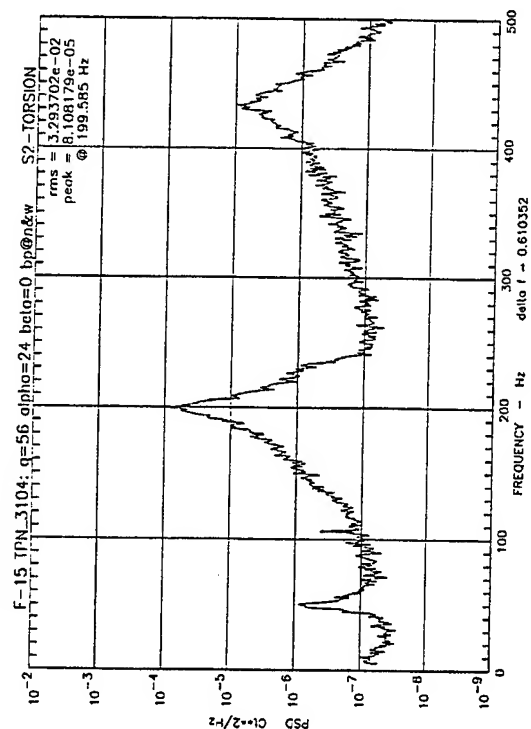
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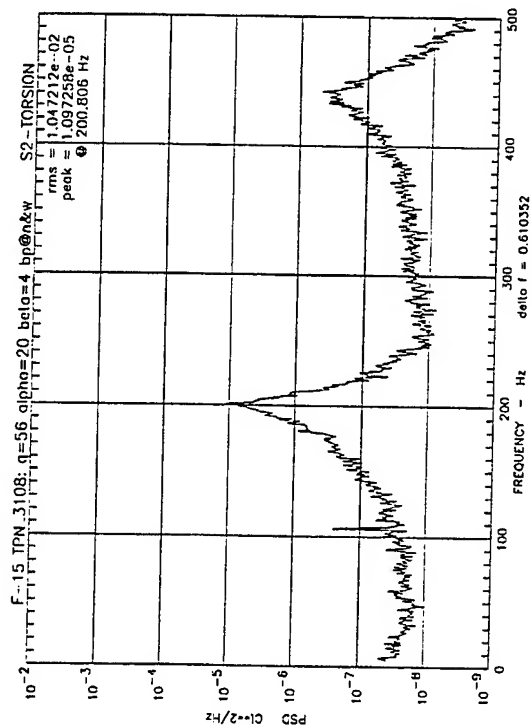
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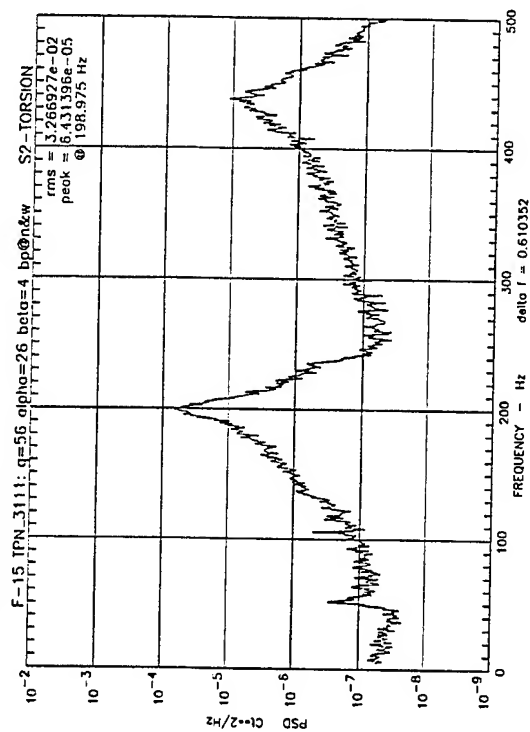
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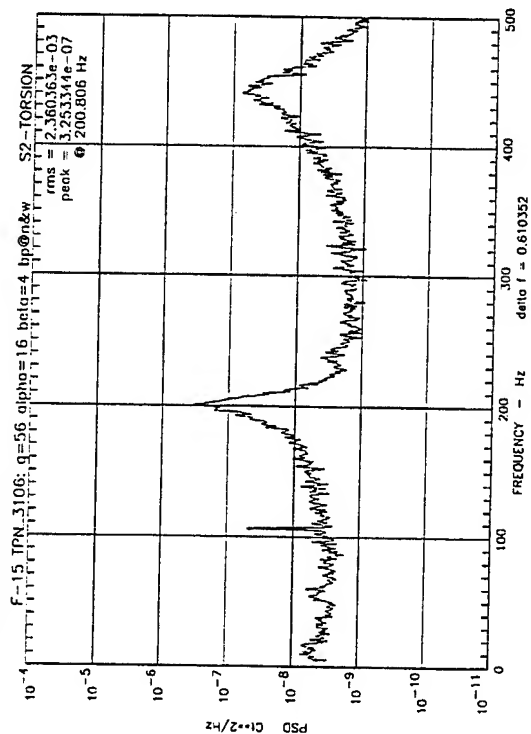
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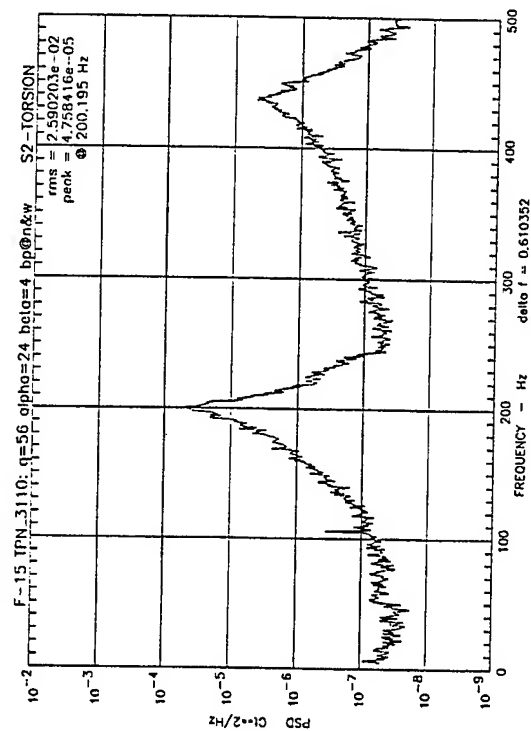
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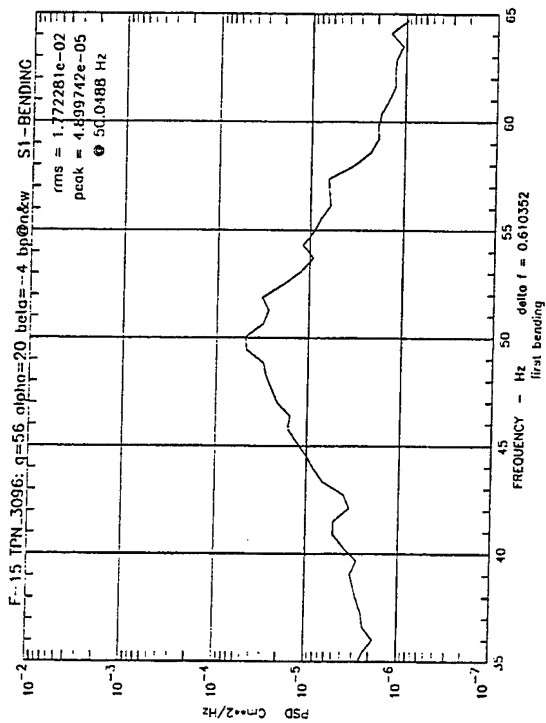
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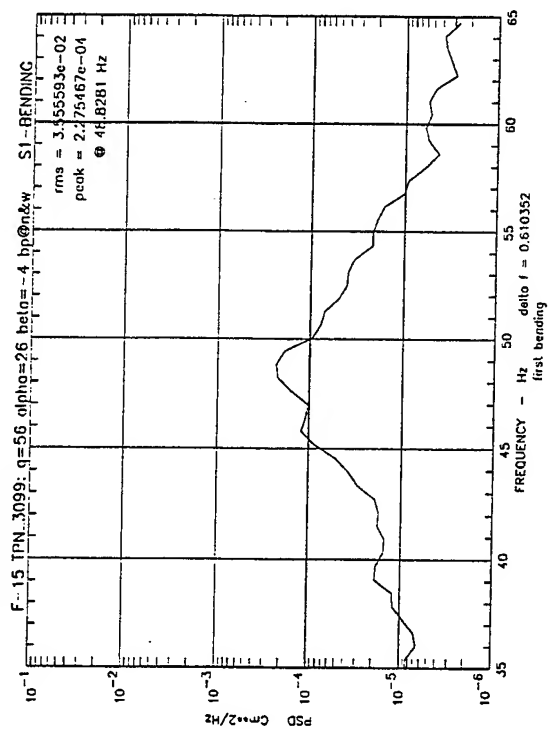
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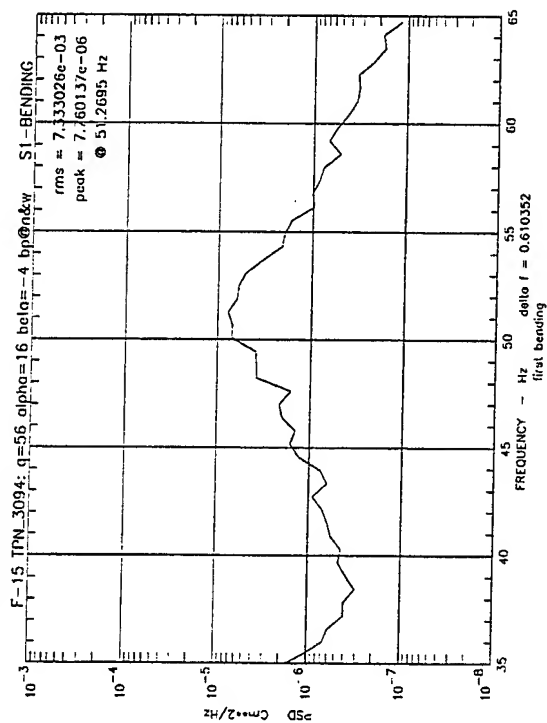
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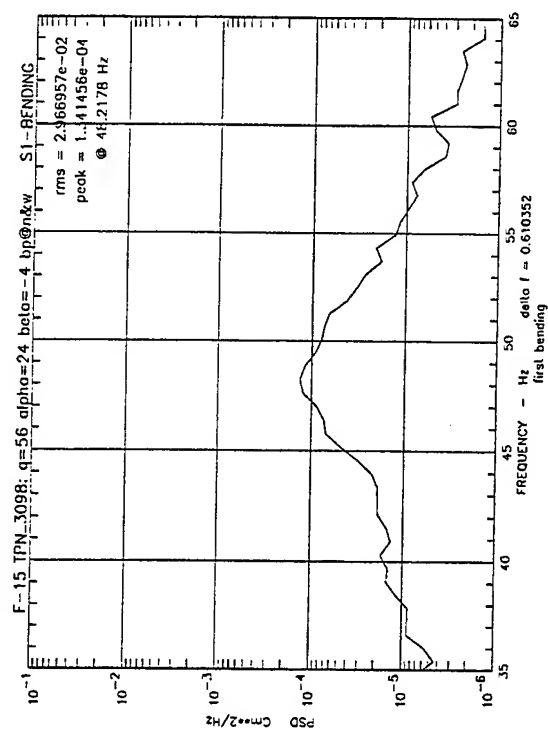
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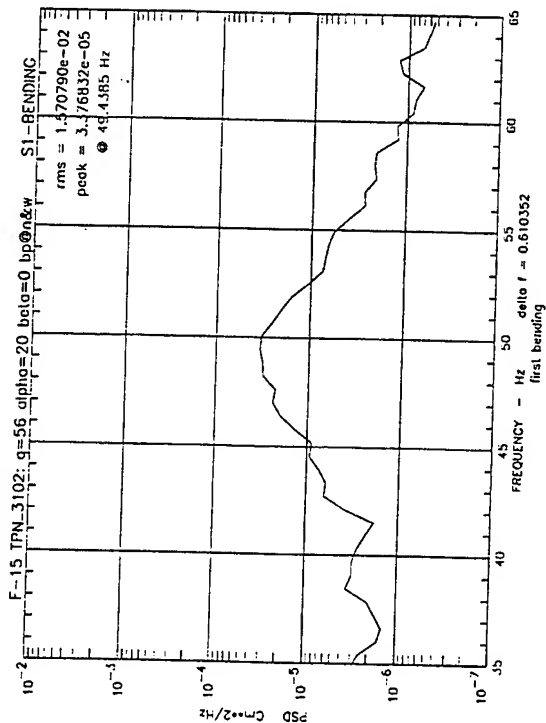
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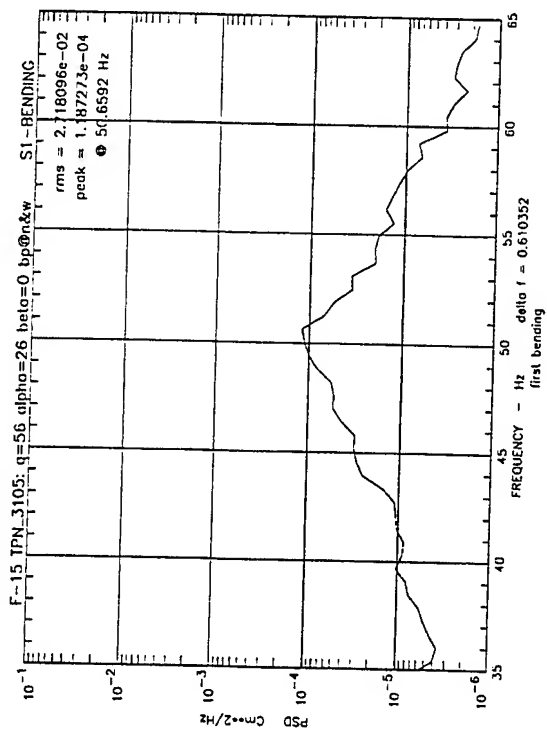
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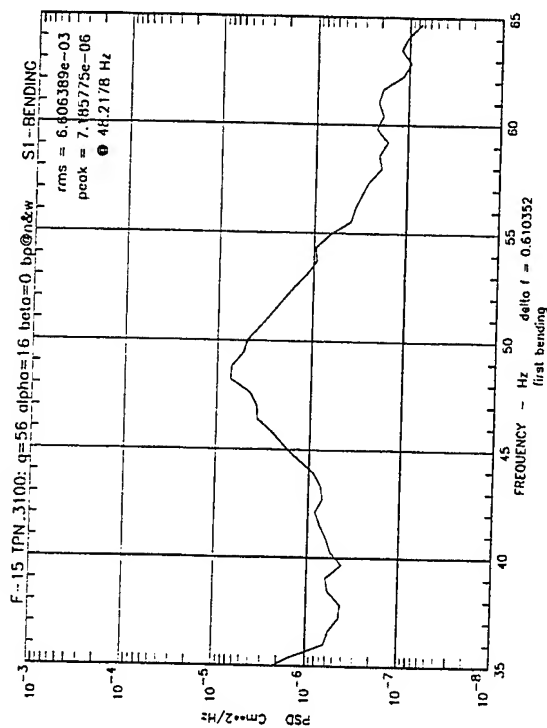
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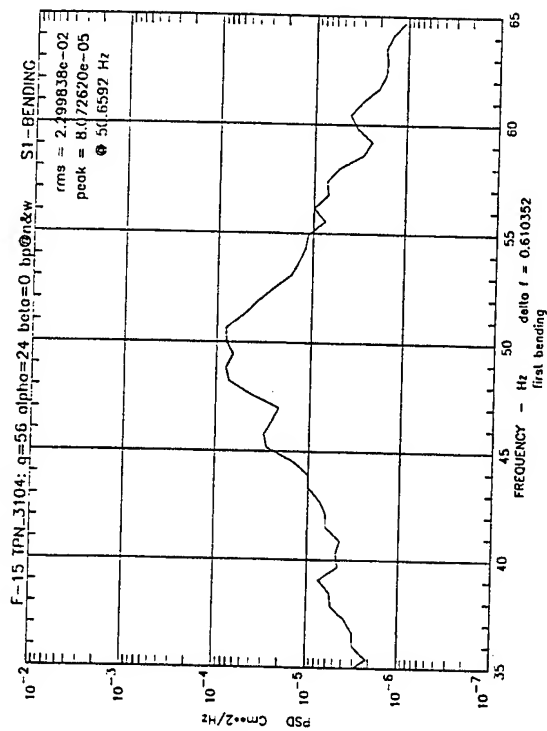
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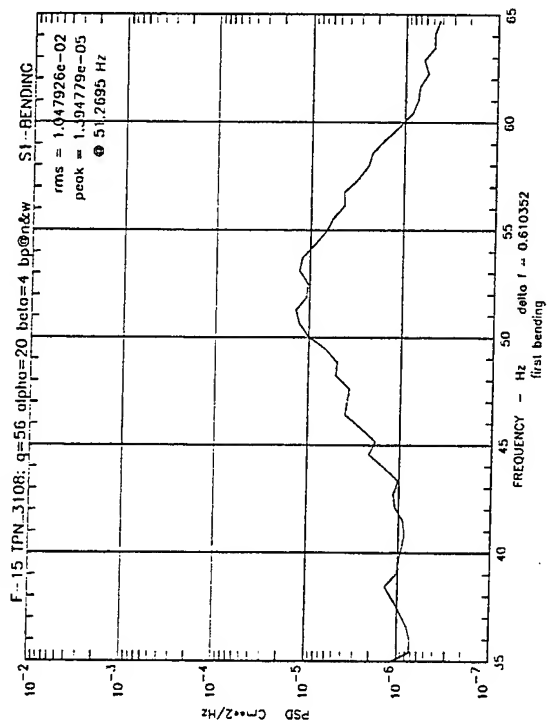
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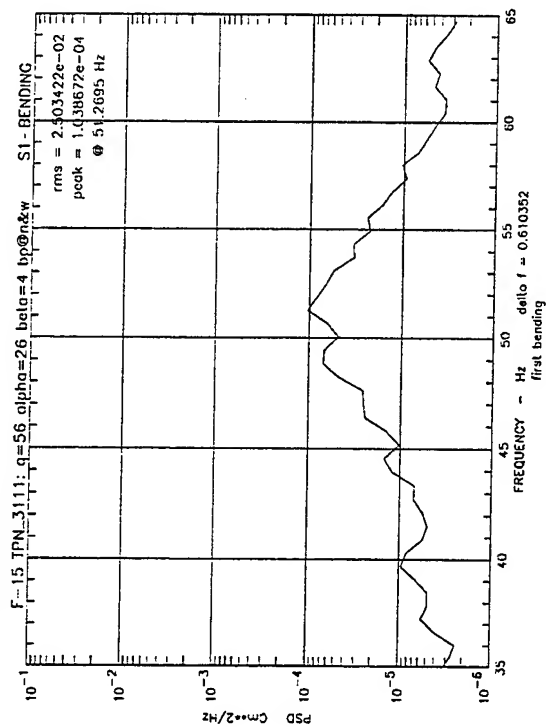
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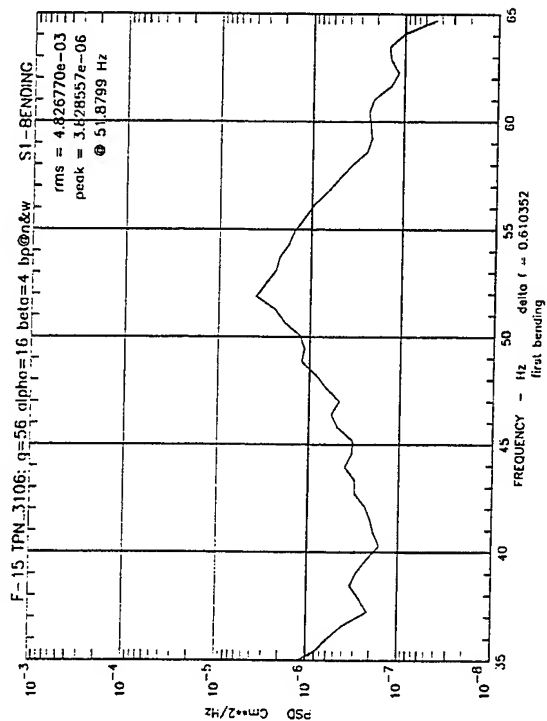
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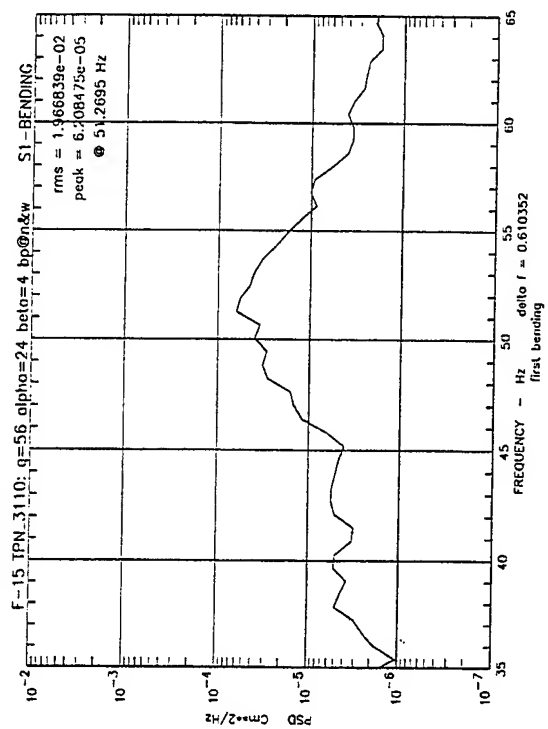
F-15 Tail Buffet Test



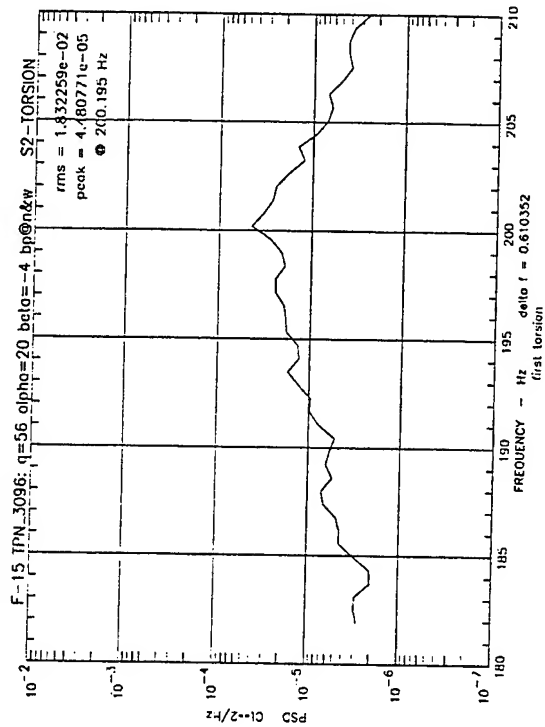
F-15 Tail Buffet Test



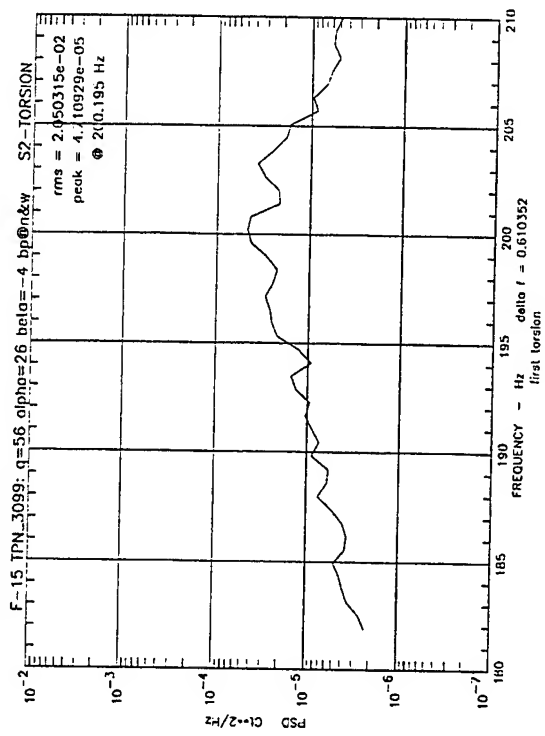
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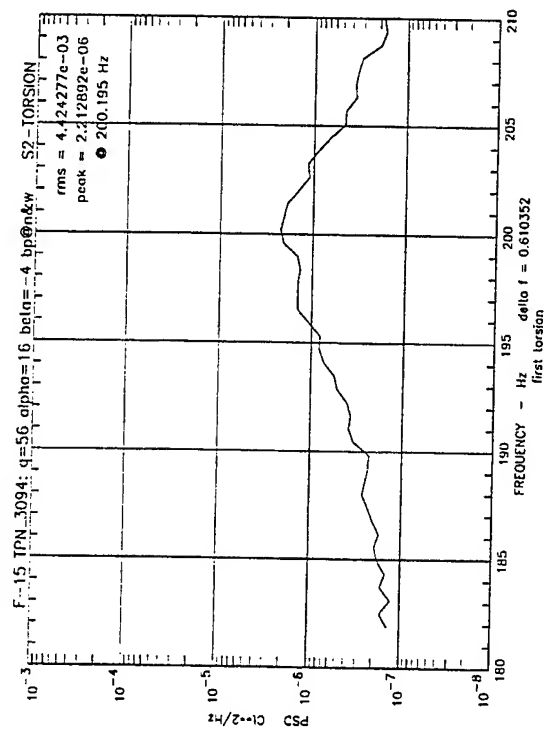
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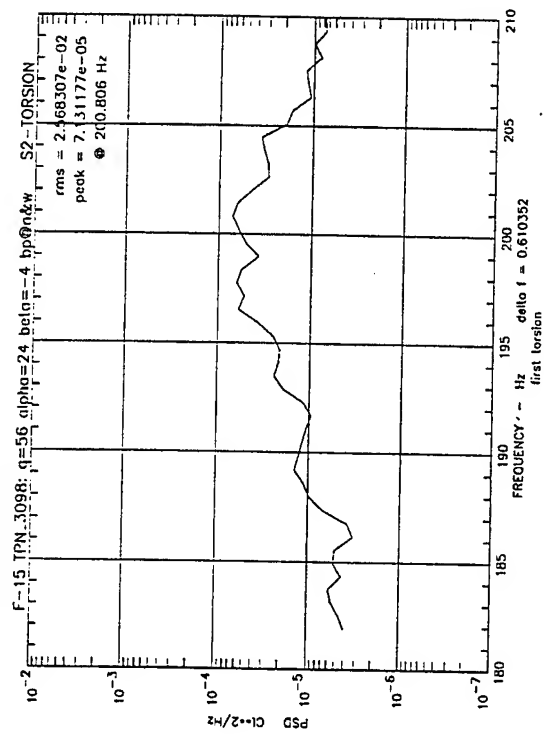
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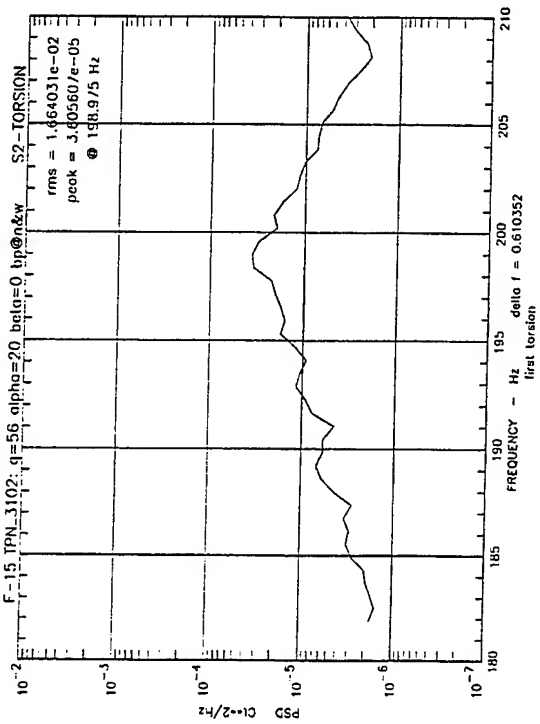
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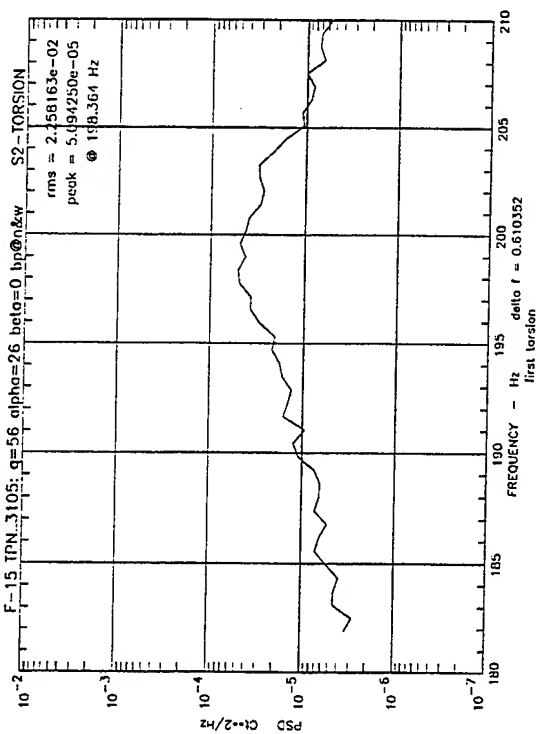
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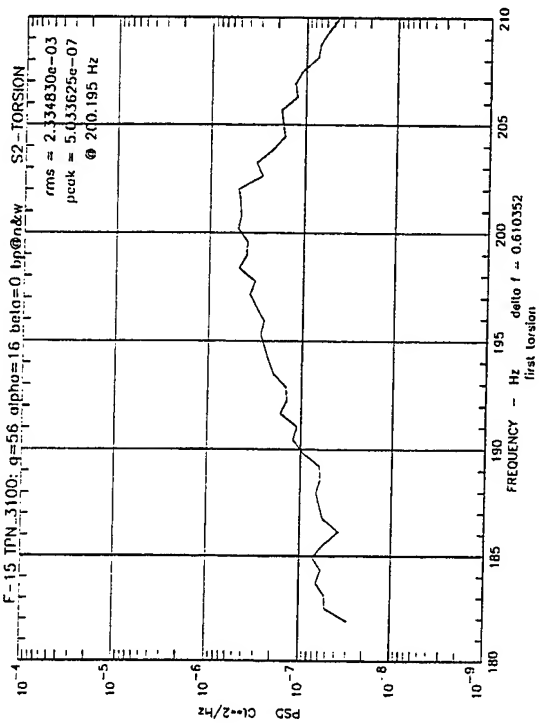
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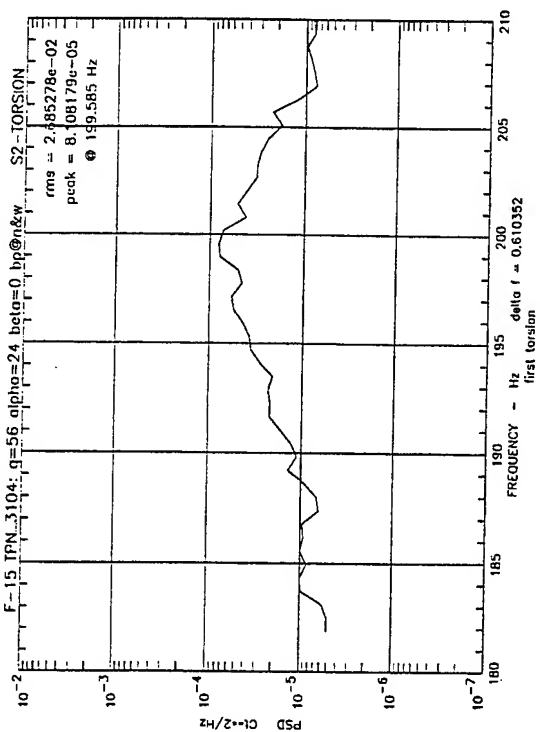
F-15 Tail Buffet Test



F-15 Tail Buffet Test

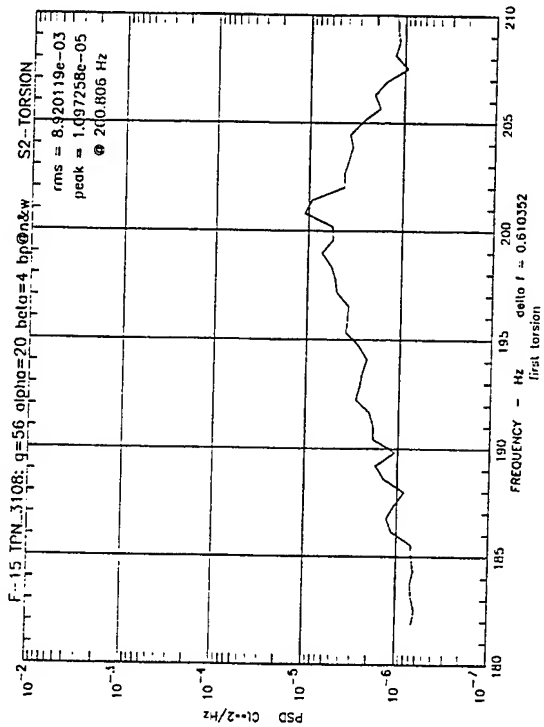


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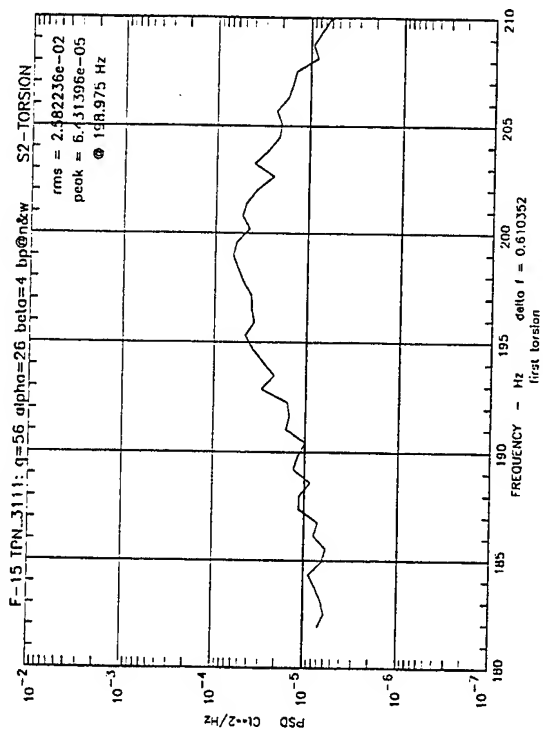




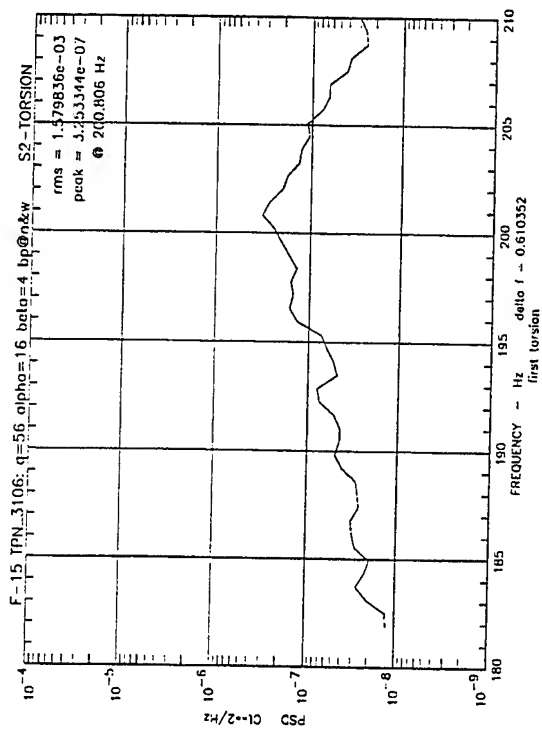
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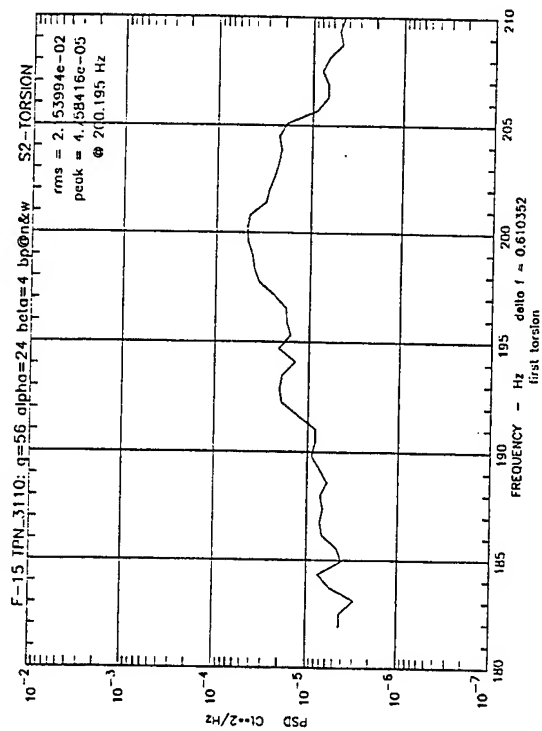
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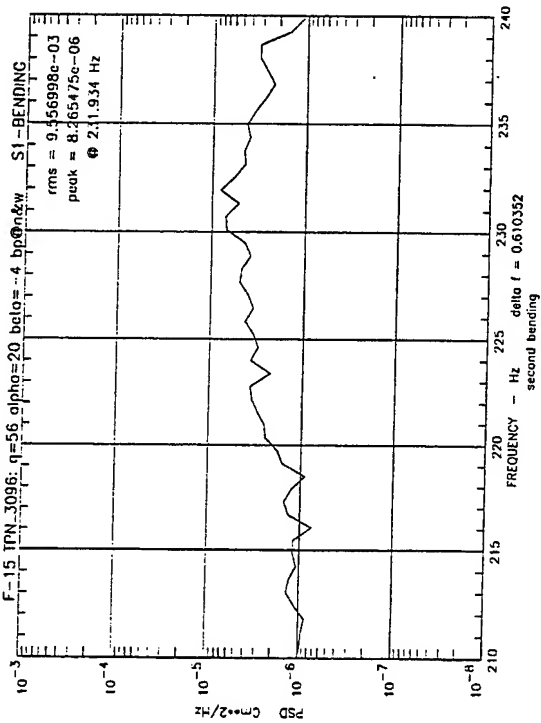
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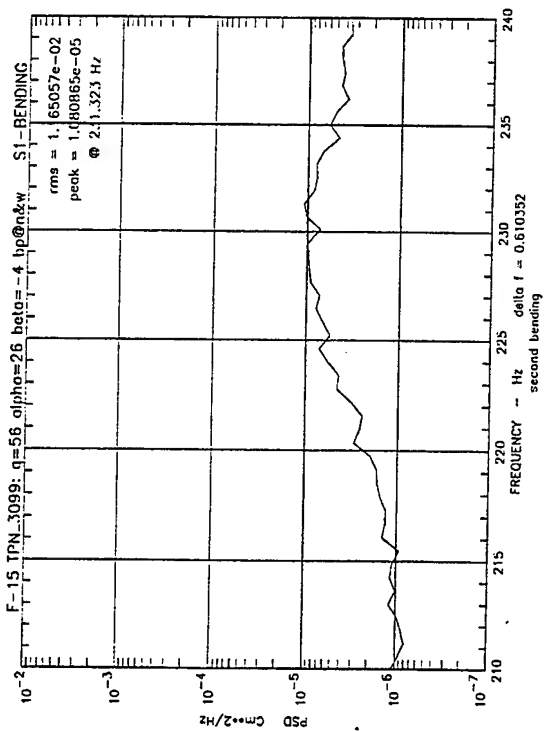
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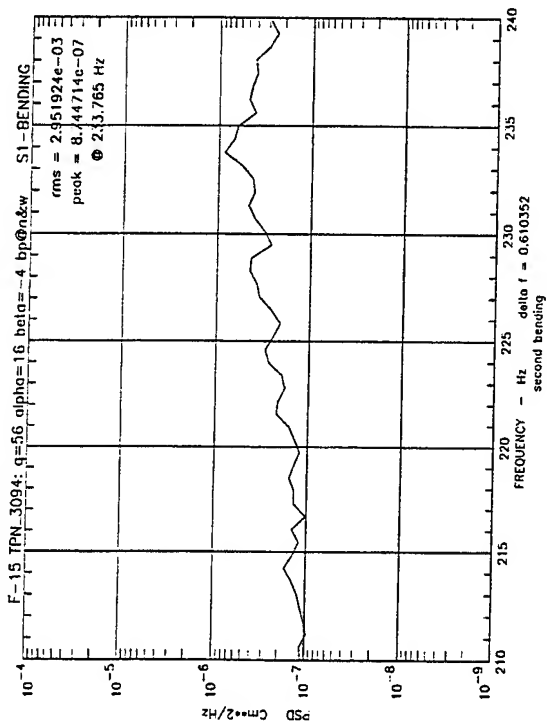
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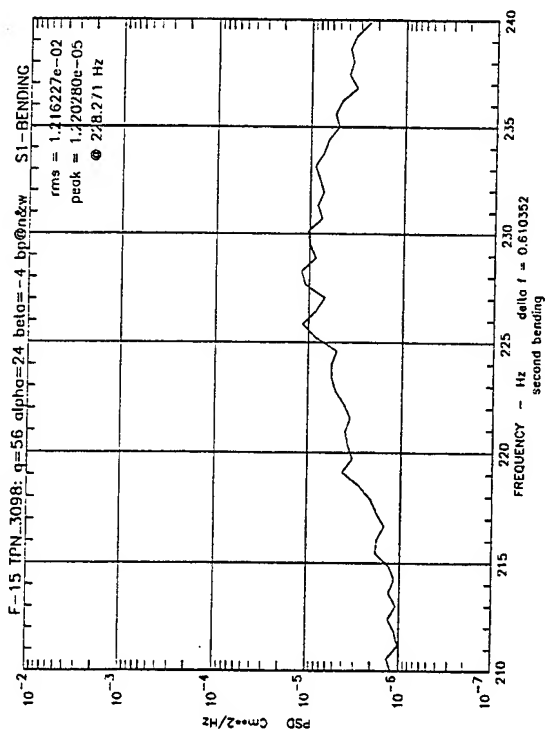
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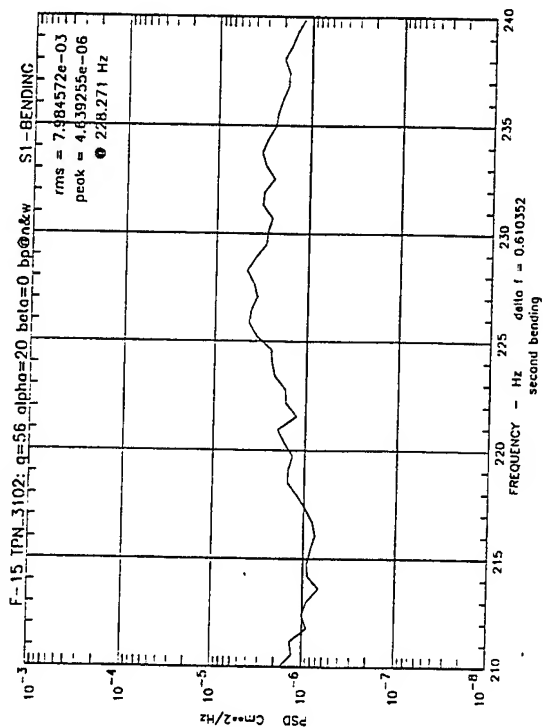
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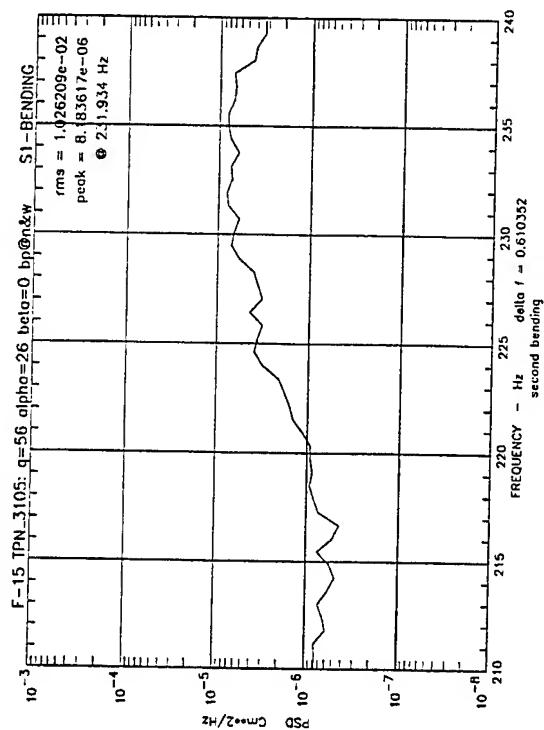
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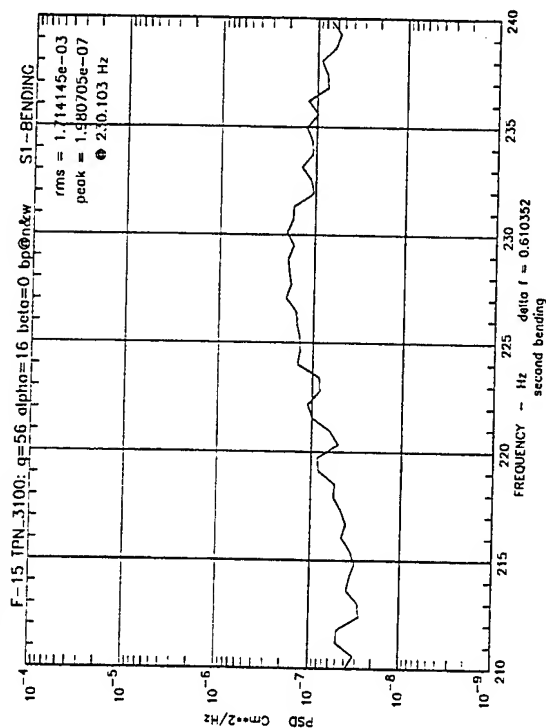
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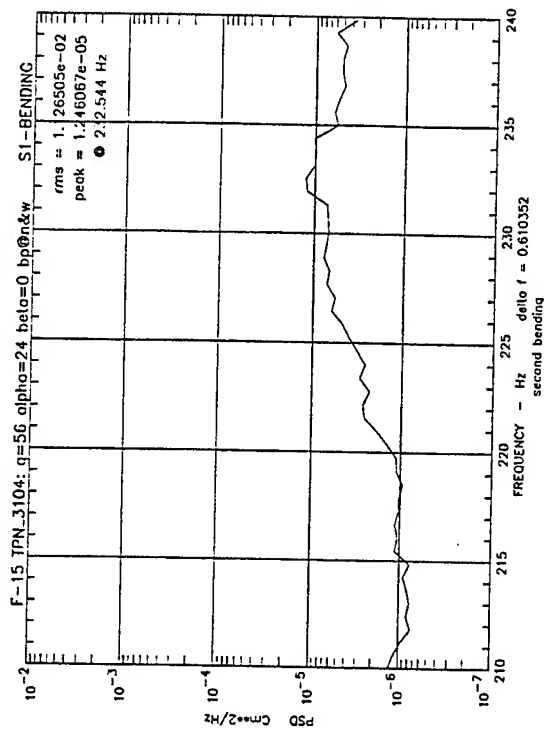
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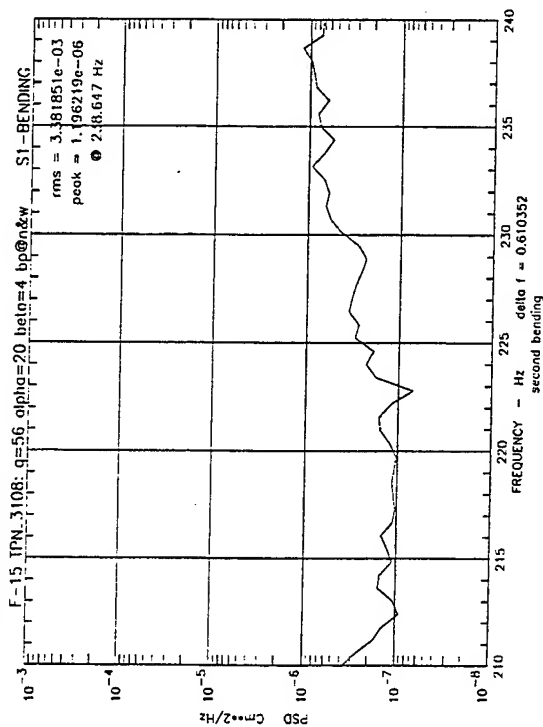
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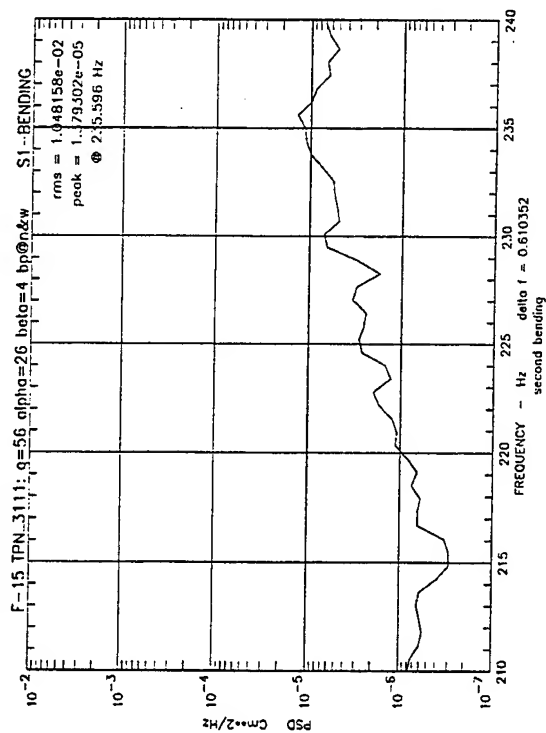
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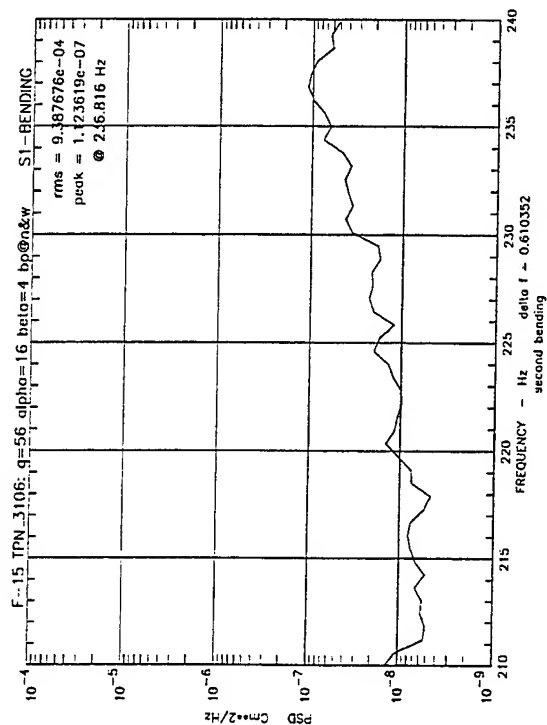
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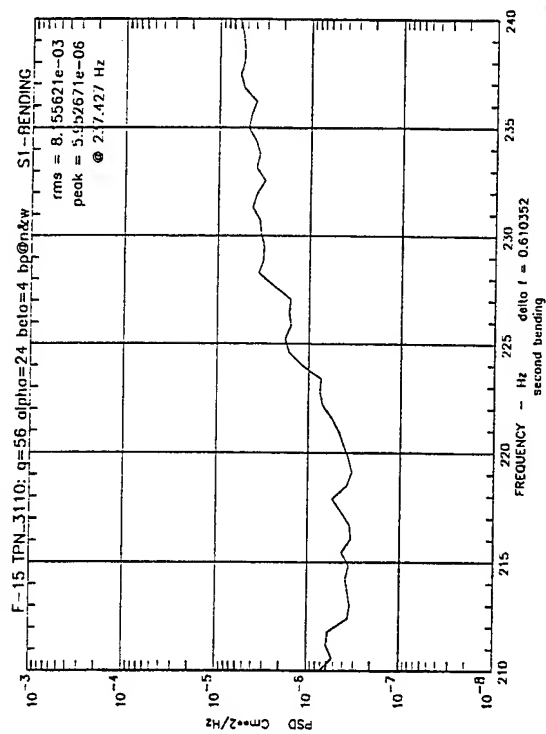
F-15 Tail Buffet Test



F-15 Tail Buffet Test



F-15 Tail Buffet Test



**FLEXIBLE TAIL RESPONSE  
NON DIMENSIONAL BENDING AND TORSION**

**Q= 56PSF**

**3.1.2 RMS SUMMARY TABS**

**F-15 Vertical Tail Buffet Test: Overall RMS (Cm & Ct nondimensional units), Q=56 psi**

**0 psi blowing pressure:**

<u>Beta</u>	<u>Alpha</u>	bending 5-500 Hz	torsion 5-500 Hz	1st bending 35-65 Hz	1st torsion 180-210 Hz	2nd bending 210-240 Hz
4	8	1.66E-03	5.42E-04	1.46E-03	1.28E-04	3.81E-04
4	20	1.24E-02	8.88E-03	9.89E-03	7.31E-03	3.77E-03
4	24	2.72E-02	2.54E-02	2.10E-02	2.07E-02	9.05E-03
4	32	5.54E-02	1.92E-02	4.79E-02	1.35E-02	1.81E-02
0	8	2.07E-03	6.48E-04	1.85E-03	1.28E-04	4.97E-04
0	20	1.97E-02	1.63E-02	1.42E-02	1.30E-02	8.49E-03
0	24	2.94E-02	3.13E-02	2.15E-02	2.48E-02	1.06E-02
0	32	6.13E-02	1.29E-02	5.52E-02	9.19E-03	1.53E-02
-4	8	1.82E-03	6.32E-04	1.54E-03	1.41E-04	6.01E-04
-4	20	2.43E-02	2.41E-02	1.62E-02	1.94E-02	1.11E-02
-4	24	3.52E-02	2.64E-02	2.90E-02	1.92E-02	1.08E-02
-4	32	5.84E-02	1.07E-02	5.31E-02	7.64E-03	1.21E-02

**45 psi blowing pressure:**

<u>Beta</u>	<u>Alpha</u>	bending 5-500 Hz	torsion 5-500 Hz	1st bending 35-65 Hz	1st torsion 180-210 Hz	2nd bending 210-240 Hz
4	8	1.79E-03	8.43E-04	1.55E-03	2.32E-04	3.76E-04
4	20	1.11E-02	7.96E-03	9.38E-03	6.81E-03	2.25E-03
4	24	2.48E-02	2.09E-02	2.00E-02	1.70E-02	5.97E-03
4	32	5.95E-02	2.01E-02	5.28E-02	1.42E-02	1.68E-02
0	8	2.12E-03	8.45E-04	1.93E-03	2.20E-04	4.39E-04
0	20	1.88E-02	1.48E-02	1.51E-02	1.25E-02	6.22E-03
0	24	2.99E-02	2.95E-02	2.29E-02	2.30E-02	1.08E-02
0	32	5.85E-02	1.46E-02	5.36E-02	1.08E-02	1.30E-02
-4	8	1.85E-03	9.49E-04	1.61E-03	1.95E-04	4.29E-04
-4	20	2.25E-02	1.94E-02	1.71E-02	1.62E-02	8.87E-03
-4	24	3.88E-02	2.94E-02	3.26E-02	2.32E-02	1.22E-02
-4	32	5.75E-02	1.13E-02	5.35E-02	8.11E-03	1.14E-02

**65 psi blowing pressure:**

<u>Beta</u>	<u>Alpha</u>	bending 5-500 Hz	torsion 5-500 Hz	1st bending 35-65 Hz	1st torsion 180-210 Hz	2nd bending 210-240 Hz
4	16	5.09E-03	2.21E-03	4.43E-03	1.43E-03	8.36E-04
4	20	1.33E-02	1.01E-02	1.10E-02	8.79E-03	3.00E-03
4	24	2.57E-02	2.45E-02	2.01E-02	2.03E-02	7.27E-03
4	28	3.71E-02	3.30E-02	2.99E-02	2.42E-02	1.10E-02
0	16	7.27E-03	3.21E-03	6.23E-03	2.35E-03	1.73E-03
0	20	2.11E-02	1.84E-02	1.59E-02	1.59E-02	7.60E-03
0	24	3.14E-02	3.38E-02	2.32E-02	2.79E-02	1.14E-02
0	28	4.10E-02	2.15E-02	3.37E-02	1.51E-02	1.49E-02
-4	16	9.23E-03	5.49E-03	7.58E-03	4.44E-03	3.06E-03
-4	20	2.49E-02	2.23E-02	1.85E-02	1.91E-02	1.00E-02
-4	24	3.60E-02	3.00E-02	2.90E-02	2.39E-02	1.23E-02
-4	28	4.66E-02	1.55E-02	4.00E-02	1.04E-02	1.57E-02

**F-15 Vertical Tail Buffet Test: Overall RMS (Cm & Ct nondimensional units), Q=56 psi**

**65 psi blowing pressure at gun only:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.00541	.00215	.00473	.00139	.00097
4	20	.01420	.01213	.01127	.01049	.00378
4	24	.02596	.02449	.02001	.01992	.00851
4	26	.03256	.03098	.02574	.02514	.00997
0	16	.00749	.00344	.00632	.00268	.00196
0	20	.02176	.02095	.01542	.01813	.00872
0	24	.03202	.03406	.02375	.02819	.01150
0	26	.03838	.03261	.03179	.02505	.01109
-4	16	.01140	.00776	.00872	.00630	.00434
-4	20	.02649	.02734	.01832	.02311	.01102
-4	24	.04180	.02930	.03560	.02210	.01182
-4	26	.04863	.02209	.04126	.01677	.01775

**65 psi blowing pressure at gun & wing L.E.:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.00571	.00247	.00491	.00163	.00099
4	20	.01374	.01081	.01133	.00915	.00313
4	24	.02574	.02315	.01990	.01903	.00793
4	26	.03211	.03043	.02479	.02480	.01036
0	16	.00801	.00369	.00681	.00288	.00180
0	20	.02060	.01846	.01559	.01602	.00708
0	24	.03175	.03202	.02385	.02648	.01155
0	26	.03728	.03235	.03055	.02619	.01121
-4	16	.01055	.00691	.00831	.00571	.00363
-4	20	.02519	.02463	.01802	.02088	.00994
-4	24	.04257	.03081	.03563	.02489	.01366
-4	26	.04822	.02716	.04115	.02226	.01609

**F-15 Vertical Tail Buffet Test: Overall RMS (Cm & Ct nondimensional units), Q=56 psf**

**87 psi blowing pressure at nose only:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.00503	.00191	.00444	.00126	.00071
4	20	.01397	.01026	.01168	.00878	.00354
4	24	.02792	.02720	.02187	.02230	.00829
4	26	.03650	.03672	.02911	.02958	.01050
0	16	.00699	.00279	.00605	.00196	.00148
0	20	.02127	.01980	.01536	.01706	.00859
0	24	.03134	.03318	.02417	.02681	.01043
0	26	.03606	.02984	.02998	.02227	.01112
-4	16	.00770	.00417	.00638	.00317	.00253
-4	20	.02590	.02630	.01761	.02220	.01160
-4	24	.03833	.02846	.03234	.02168	.01159
-4	26	.04291	.01843	.03500	.01304	.01818

**87 psi blowing pressure at nose & 65 psi at gun:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.00555	.00226	.00487	.00149	.00089
4	20	.01415	.01248	.01110	.01078	.00378
4	24	.02554	.02590	.01931	.02141	.00806
4	26	.03293	.03235	.02609	.02621	.00979
0	16	.00767	.00363	.00651	.00280	.00193
0	20	.02222	.02180	.01587	.01901	.00867
0	24	.03218	.03382	.02438	.02777	.01125
0	26	.03687	.03182	.03039	.02462	.01062
-4	16	.01138	.00773	.00884	.00633	.00428
-4	20	.02559	.02694	.01746	.02291	.01069
-4	24	.04219	.02949	.03619	.02212	.01150
-4	26	.04927	.02270	.04227	.01698	.01729

**87 psi blowing pressure at nose & 65 psi at wing L.E.:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	16	.00550	.00236	.00483	.00158	.00094
4	20	.01302	.01047	.01048	.00892	.00338
4	24	.02583	.02590	.01967	.02154	.00816
4	26	.03230	.03267	.02503	.02582	.01048
0	16	.00759	.00329	.00661	.00234	.00171
0	20	.02123	.01925	.01571	.01664	.00799
0	24	.03093	.03294	.02300	.02685	.01127
0	26	.03362	.02999	.02718	.02258	.01026
-4	16	.00900	.00551	.00733	.00442	.00295
-4	20	.02391	.02171	.01772	.01832	.00956
-4	24	.03684	.03150	.02967	.02568	.01216
-4	26	.04104	.02572	.03556	.02050	.01165

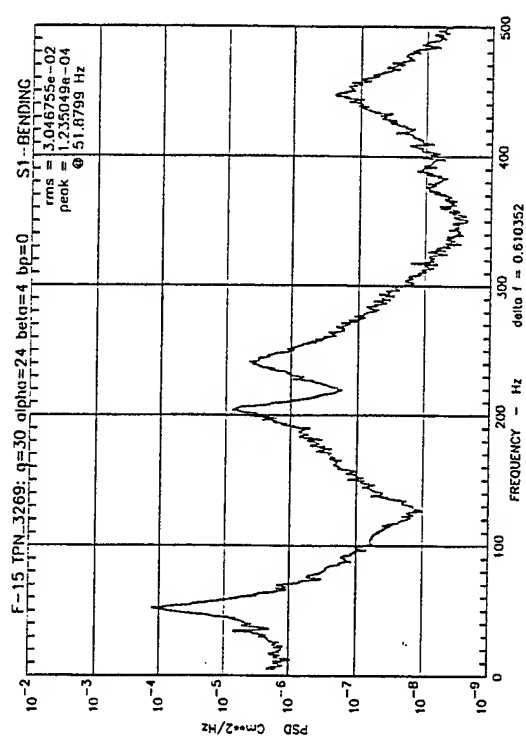
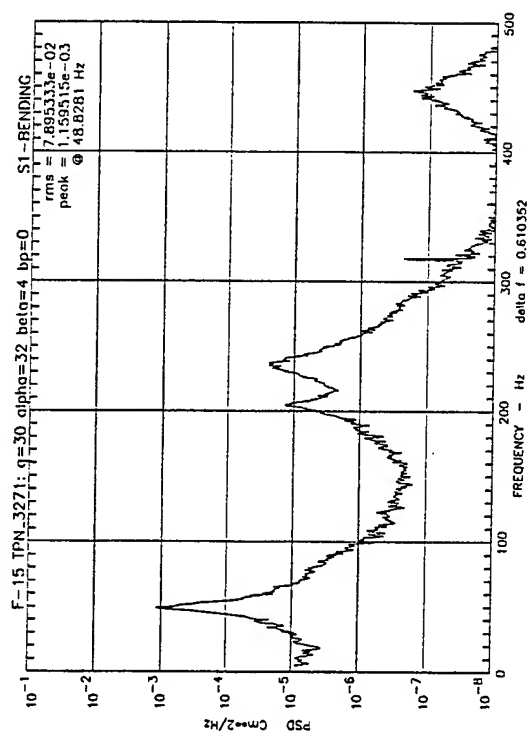
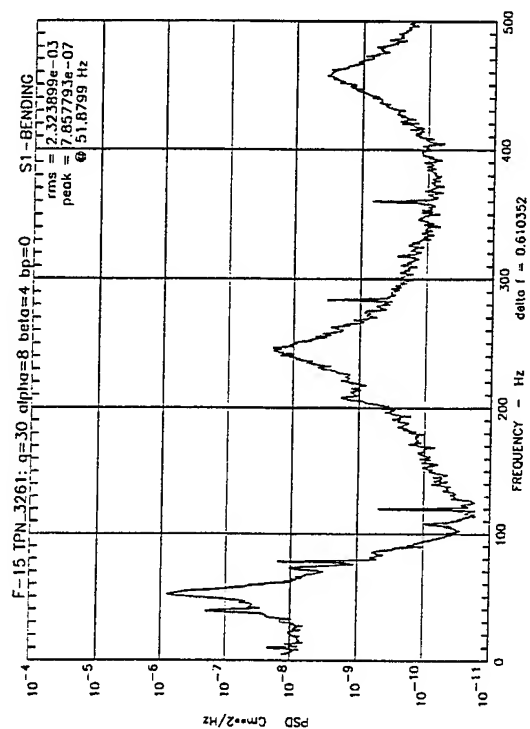
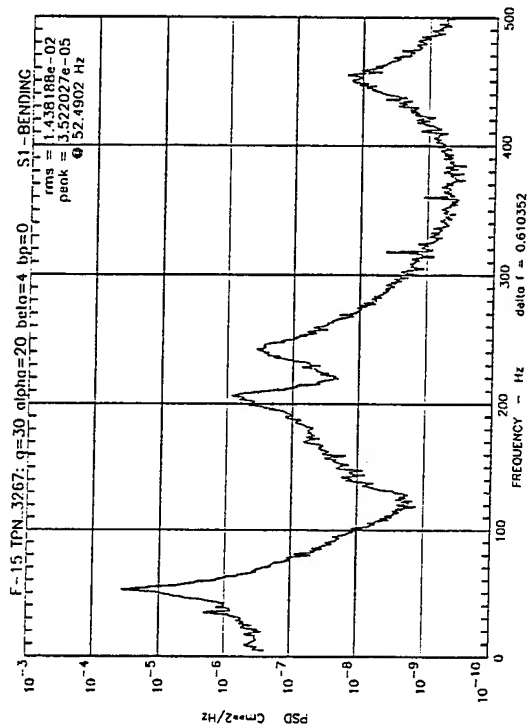


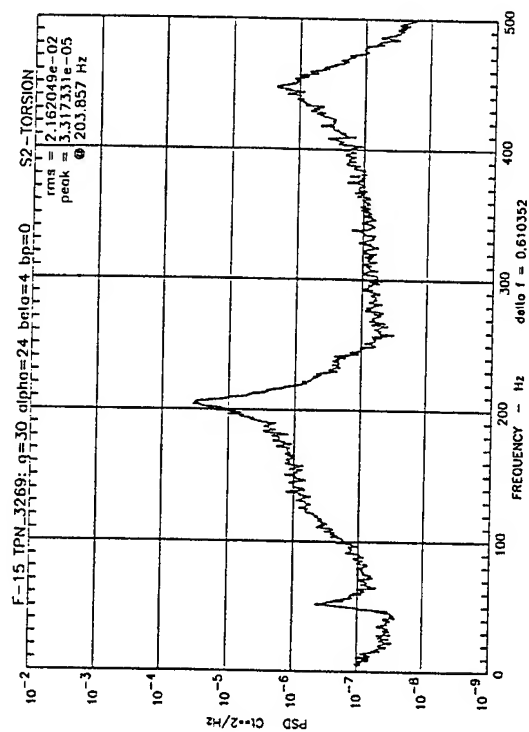
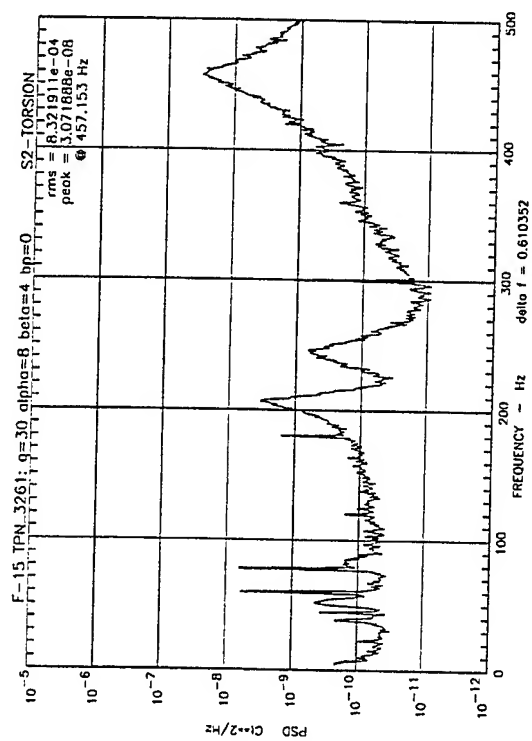
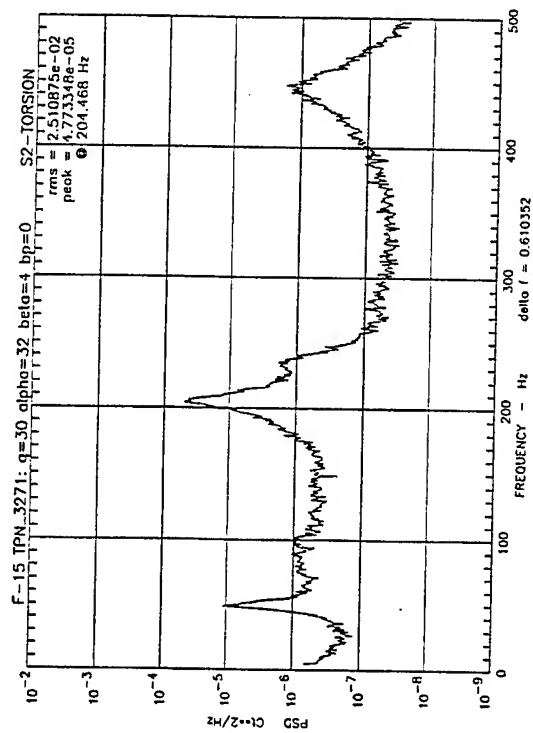
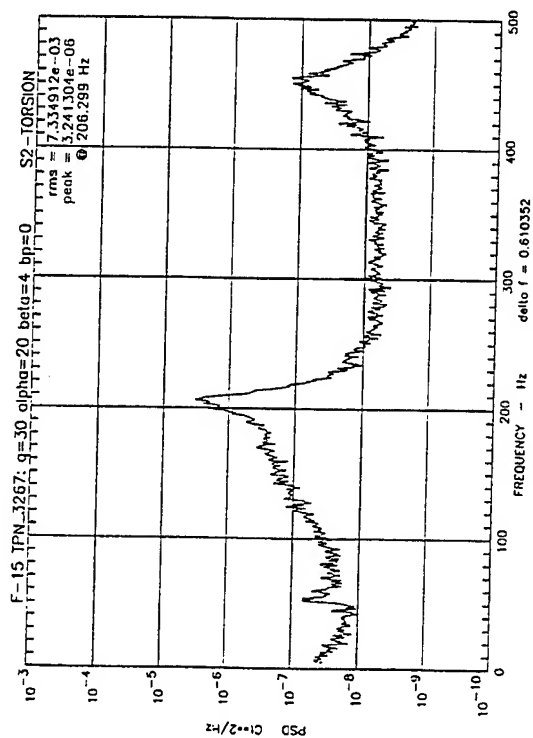
**FLEXIBLE TAIL RESPONSE  
NON DIMENSIONAL BENDING AND TORSION**

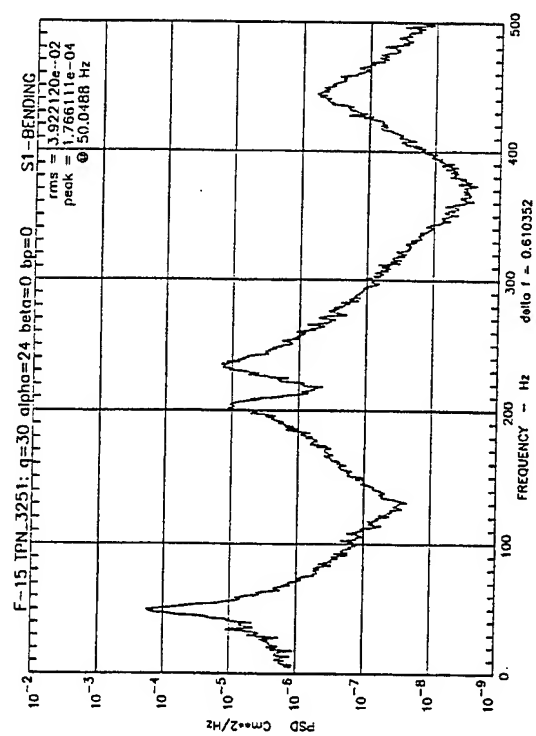
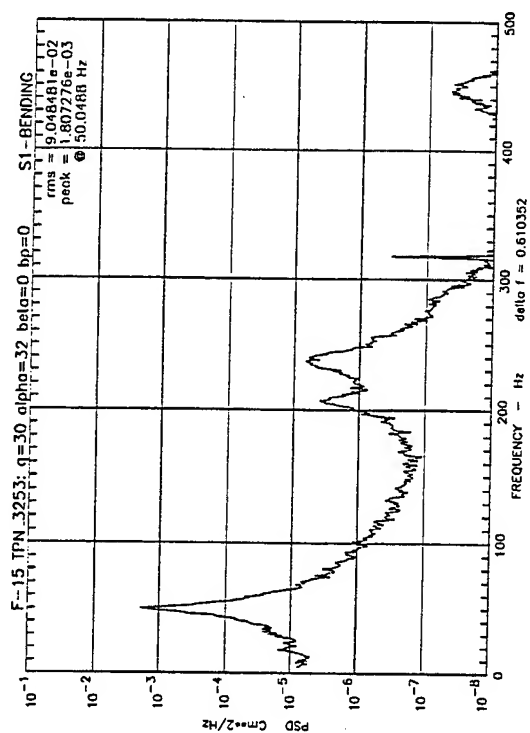
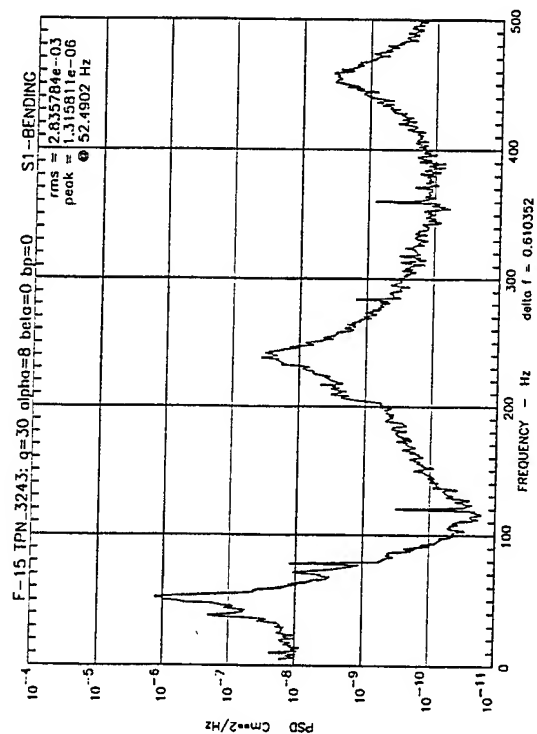
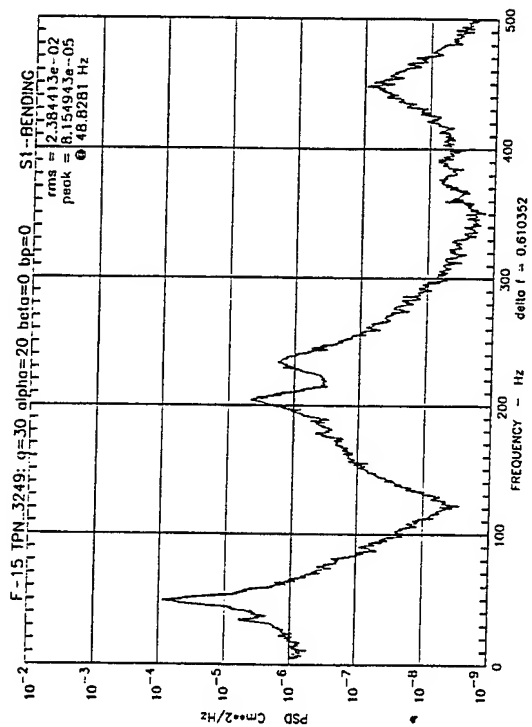
**PSD GRAPHS**

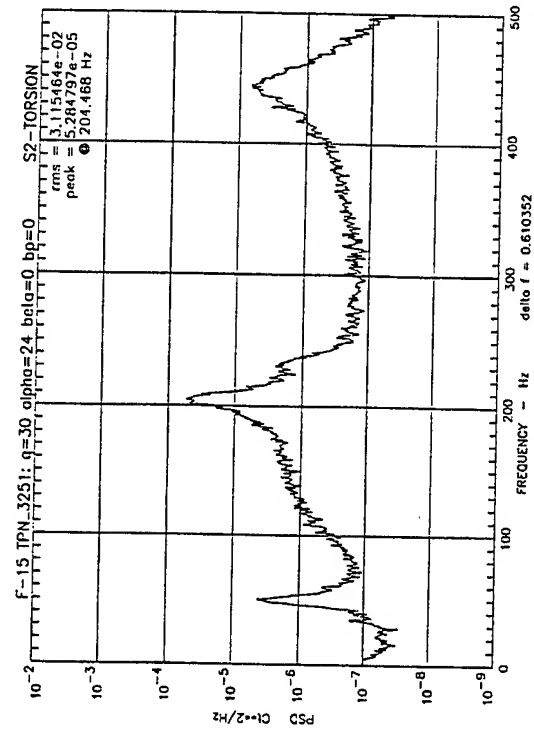
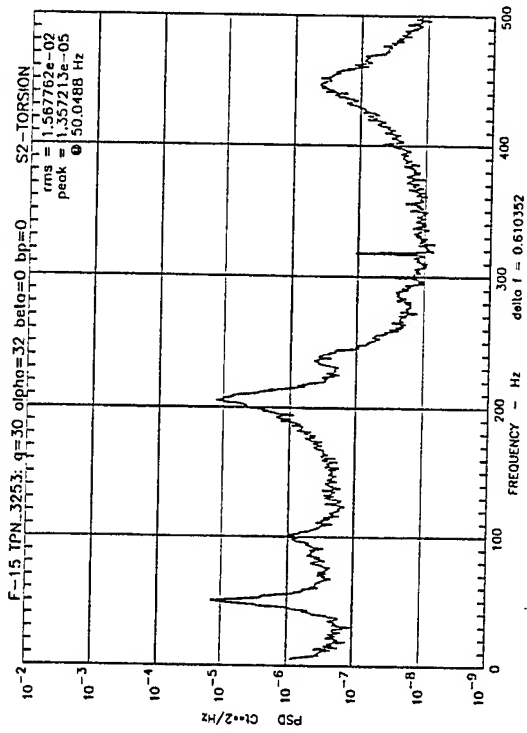
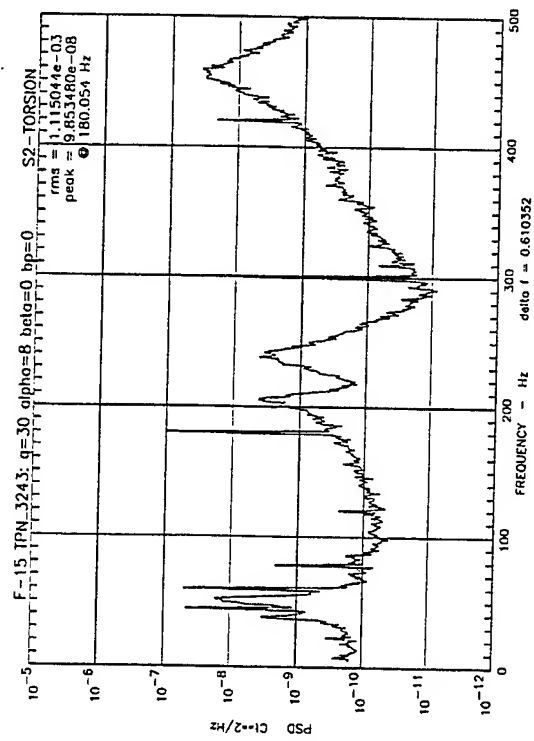
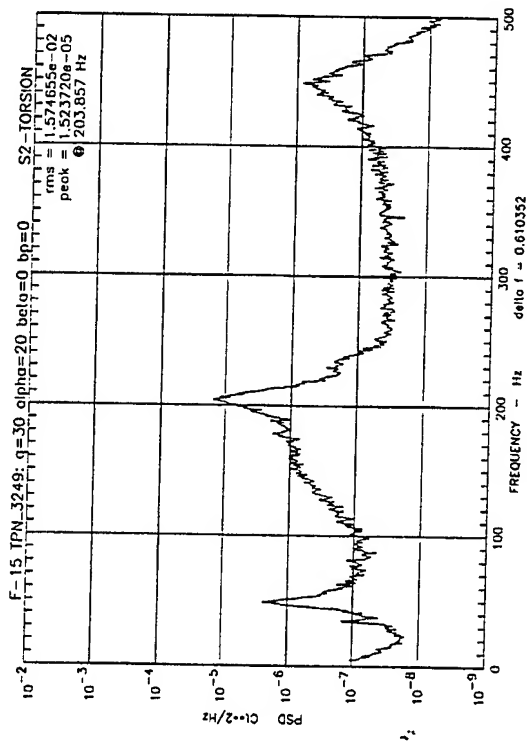
**Q= 30 PSF**

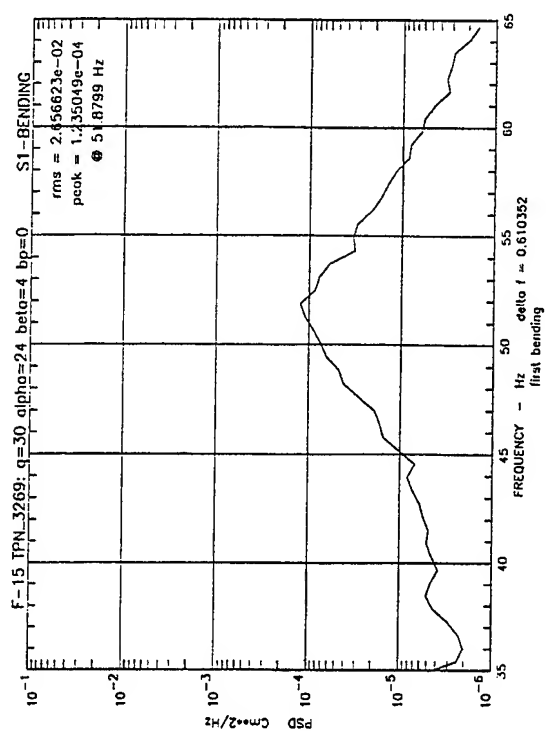
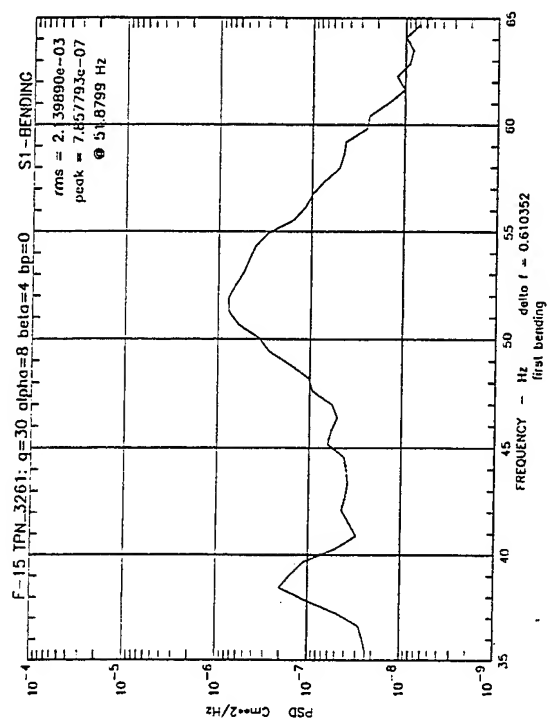
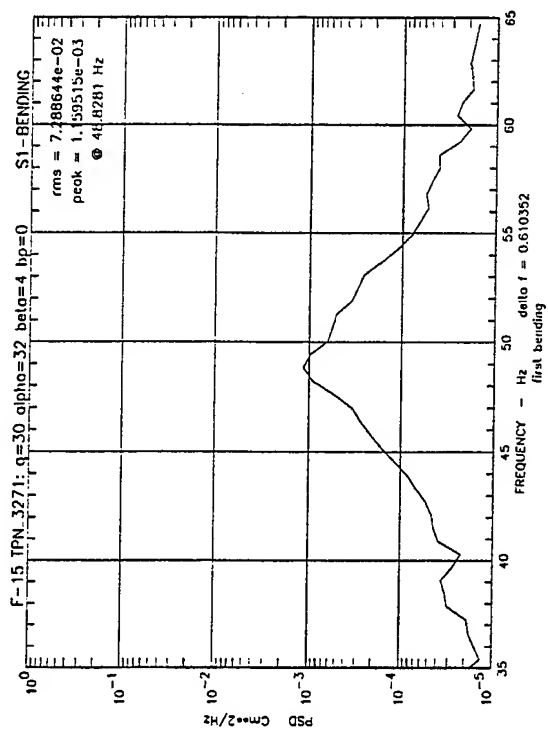
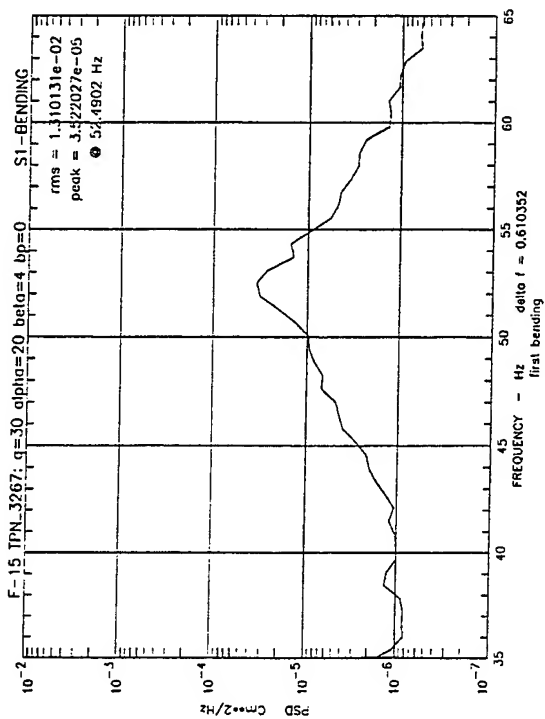
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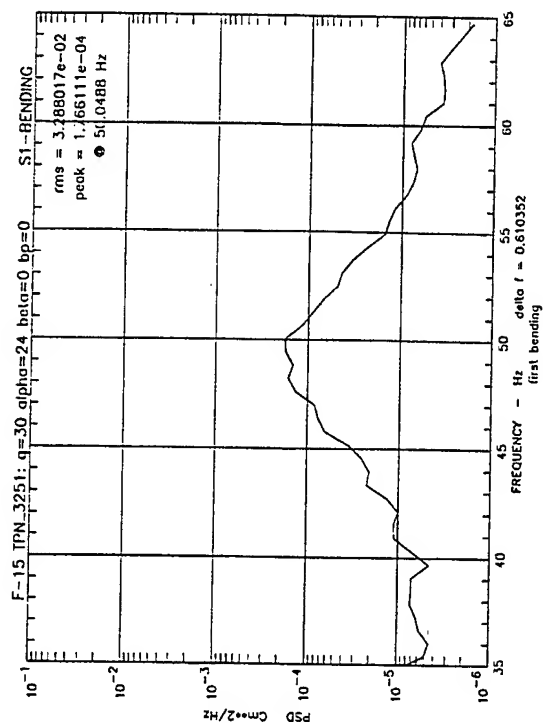
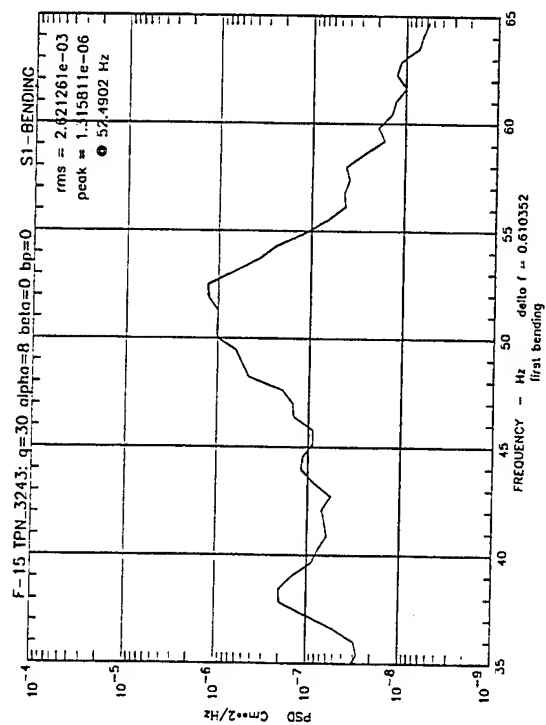
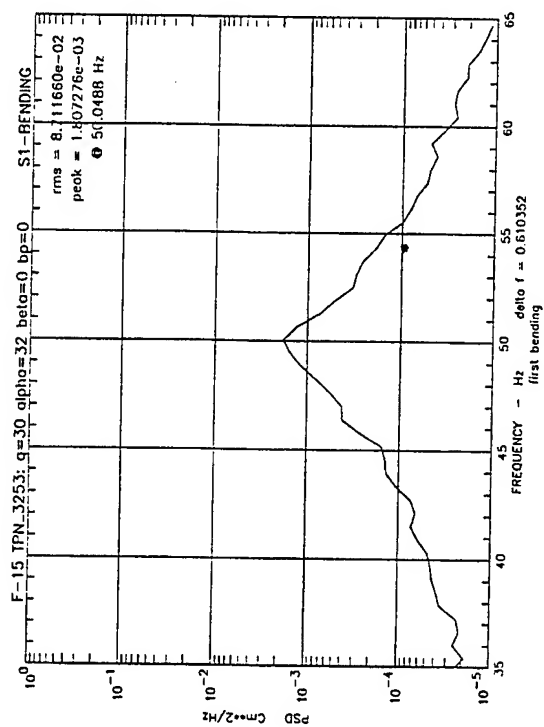
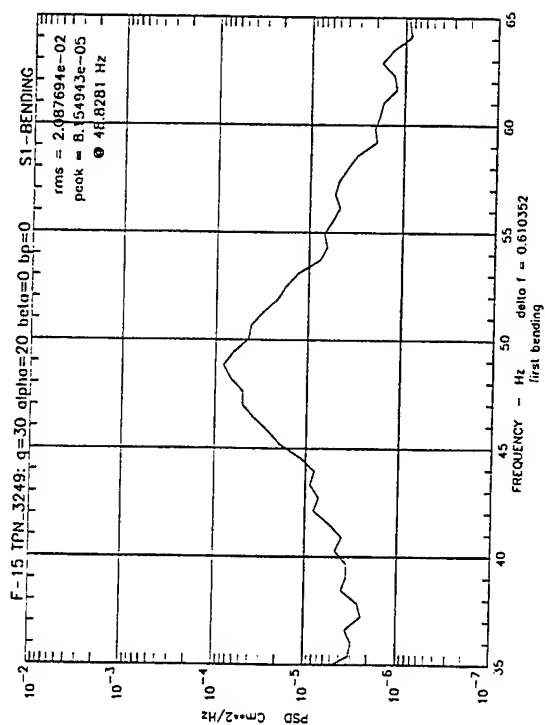


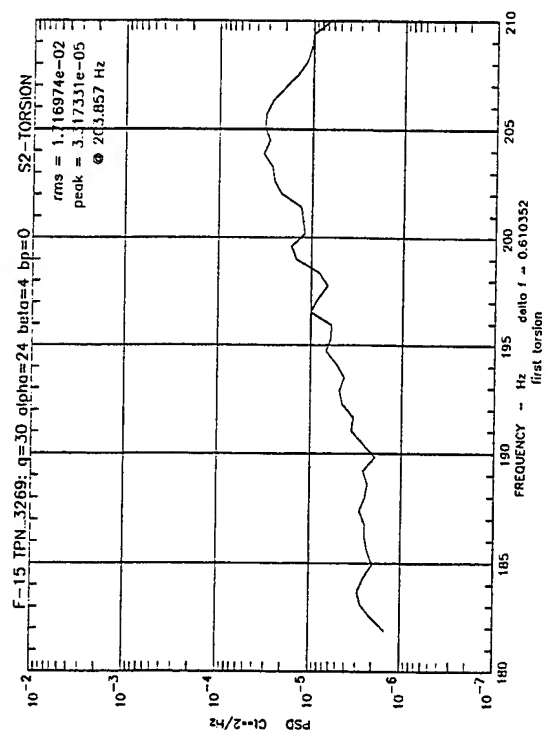
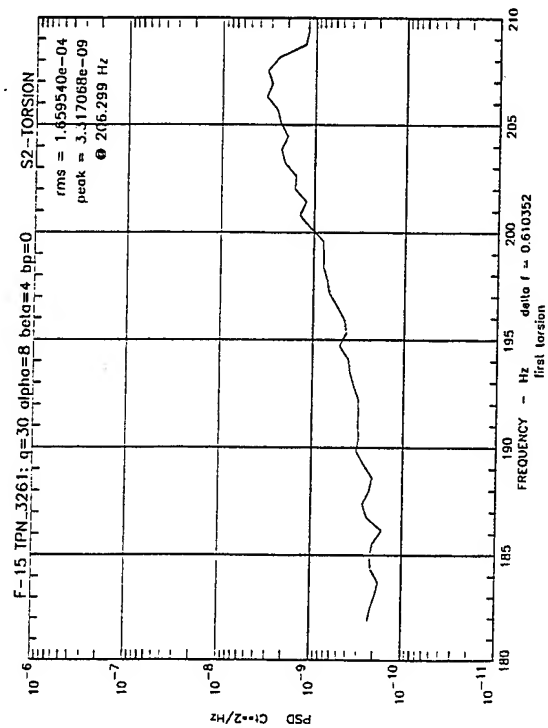
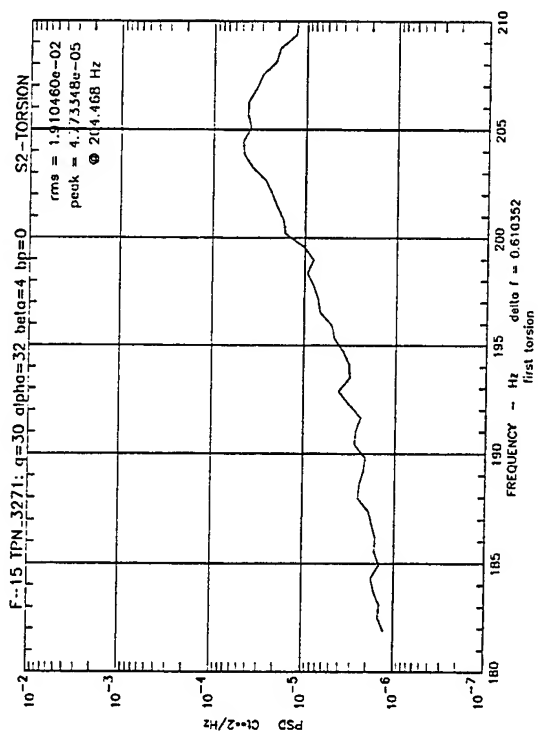
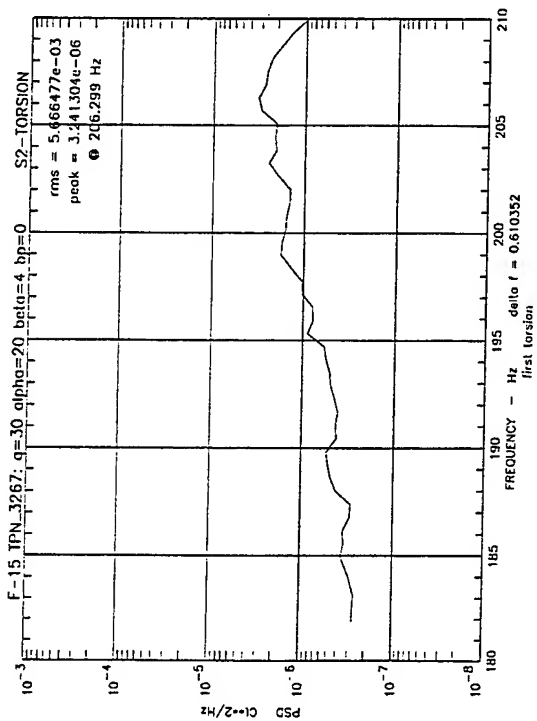




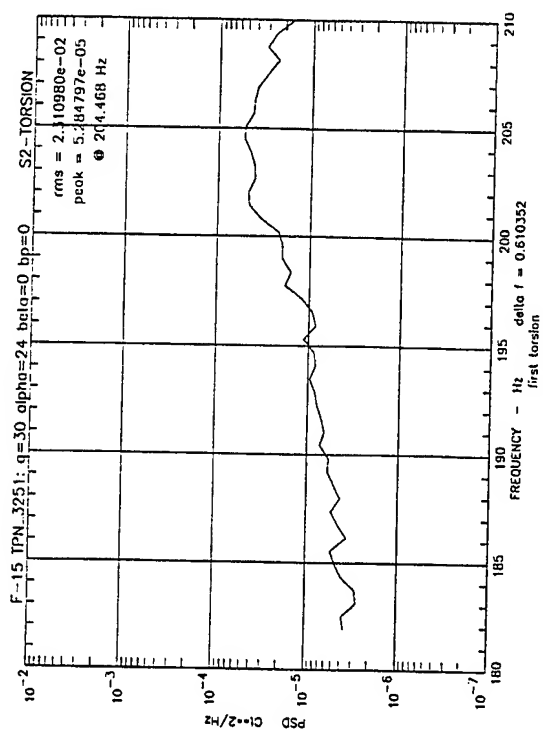
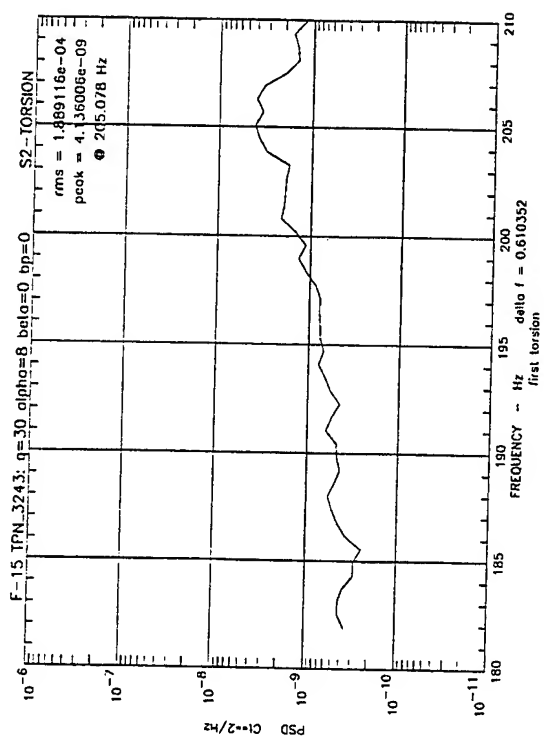
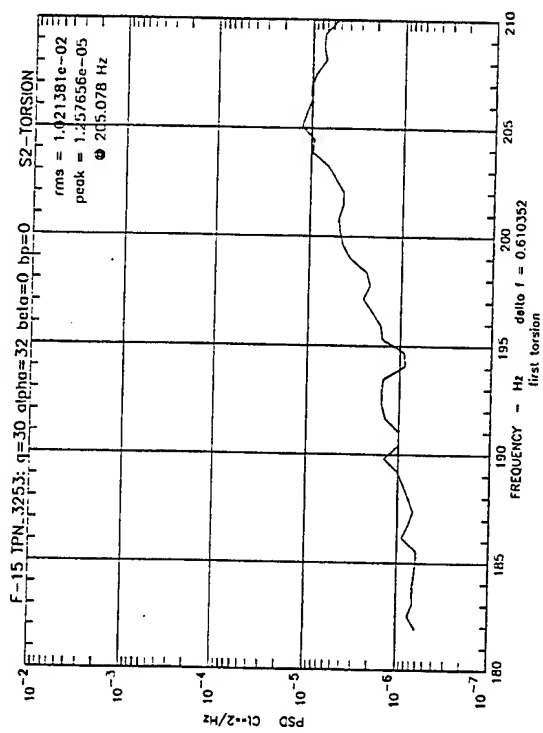
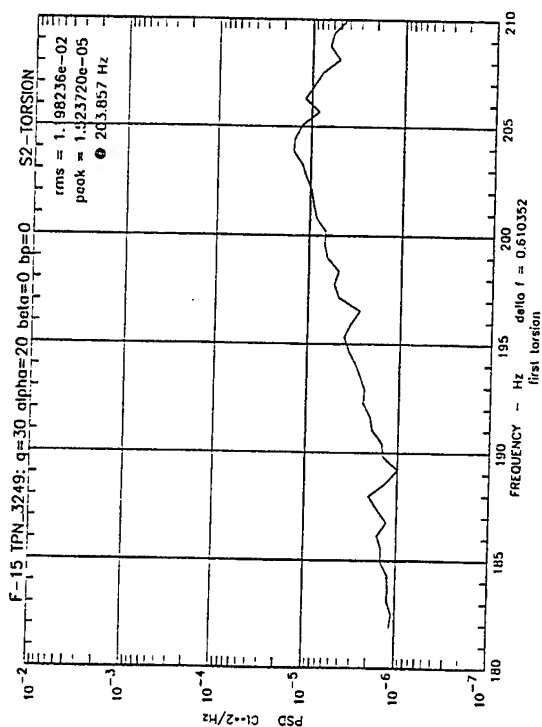


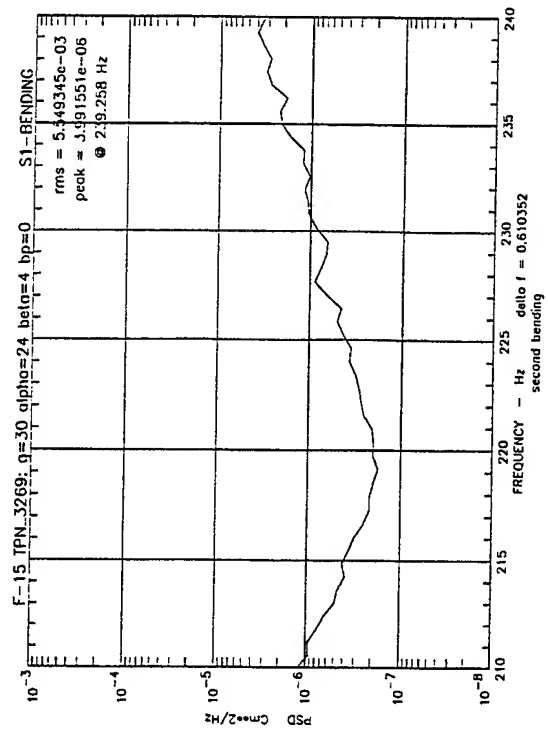
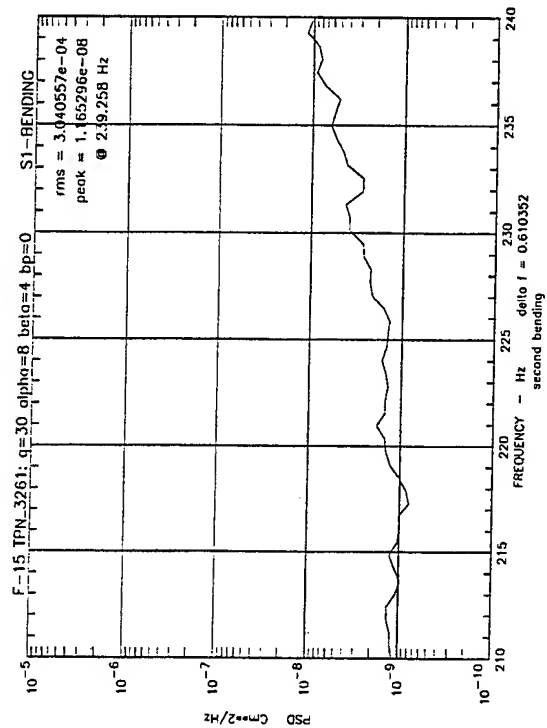
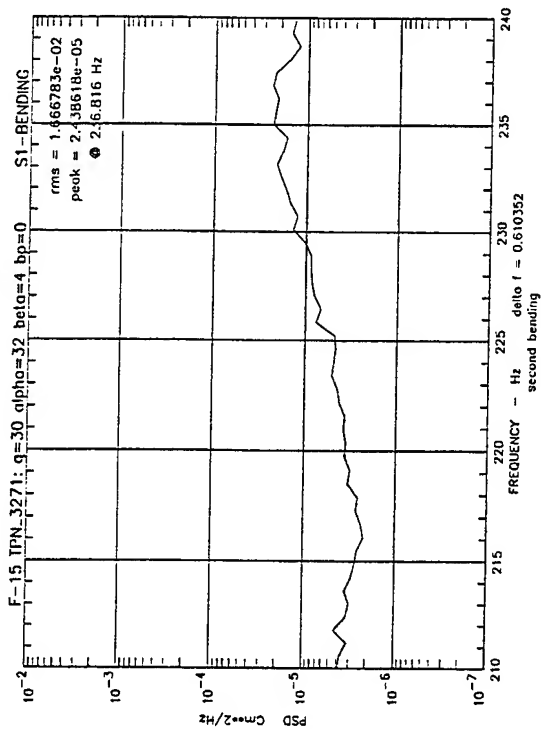
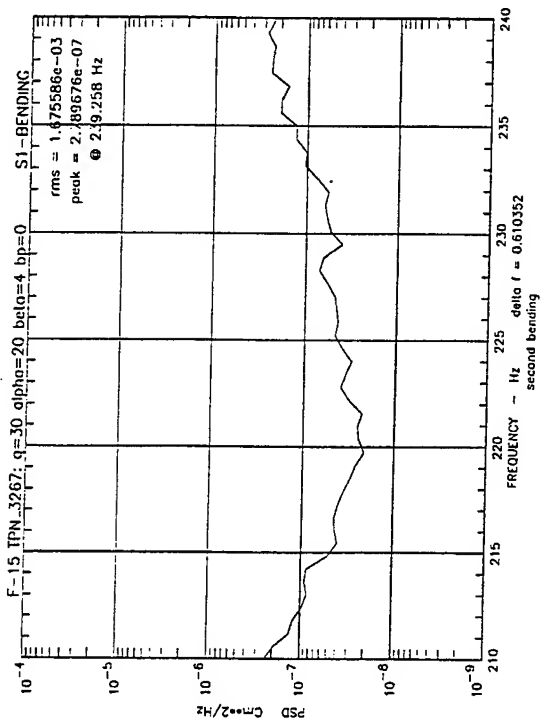


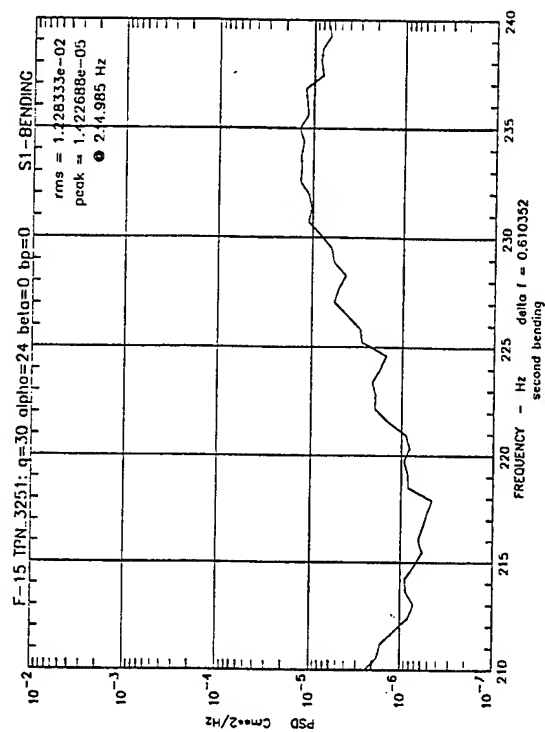
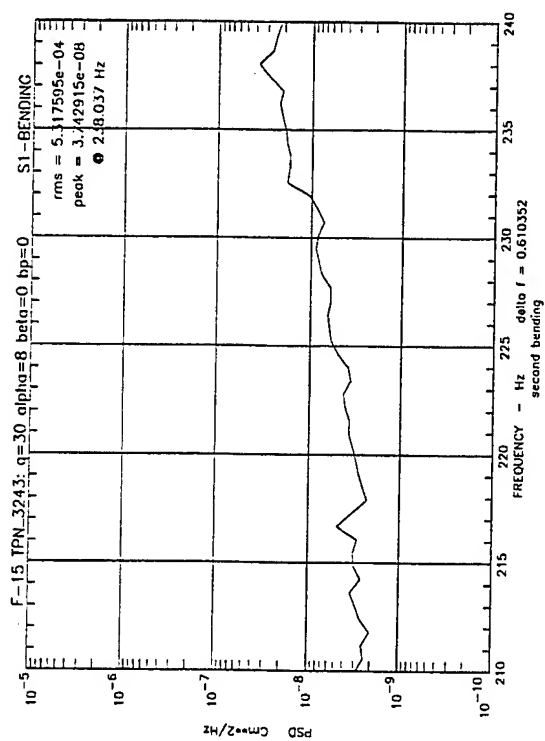
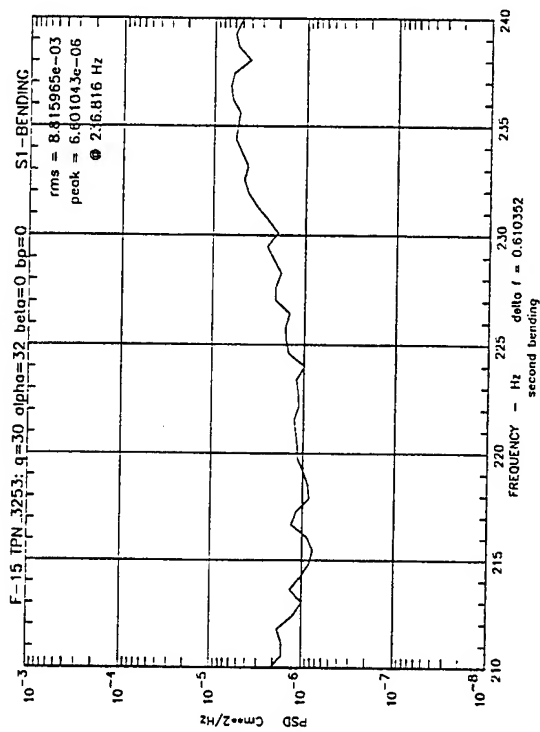
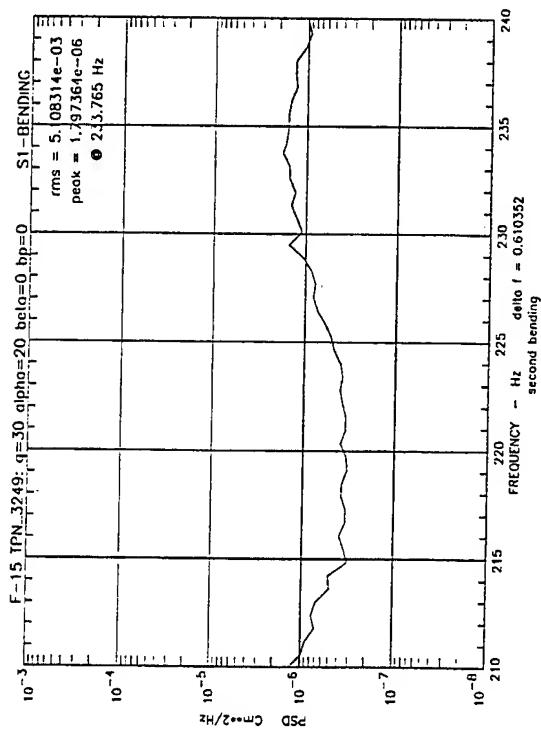


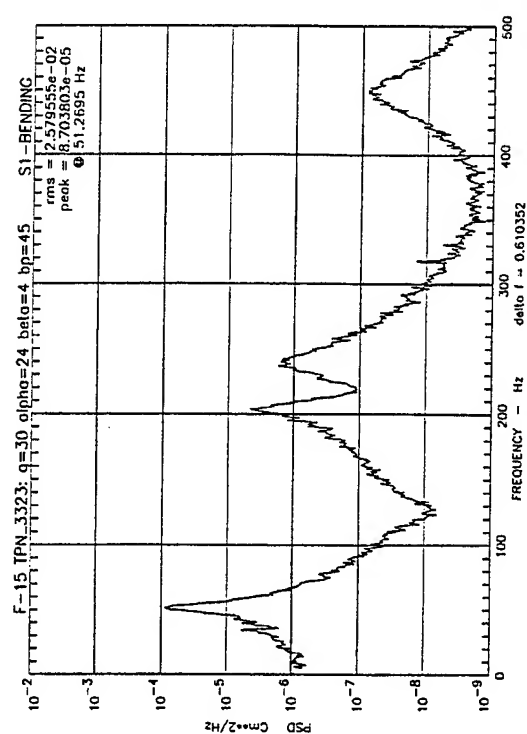
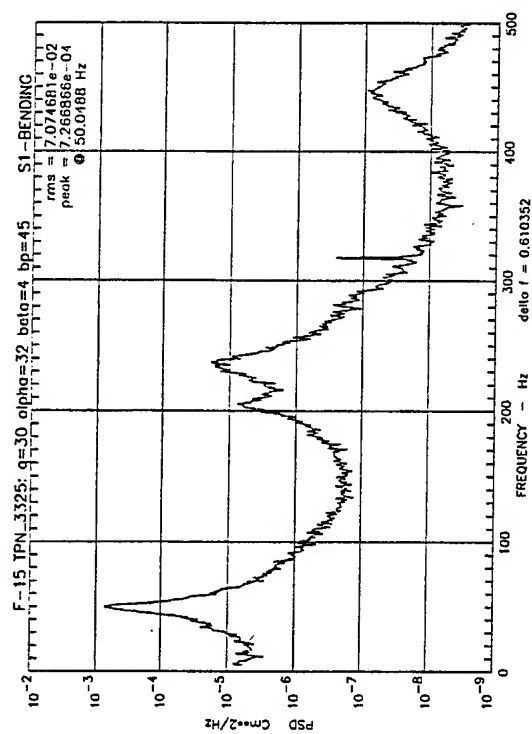
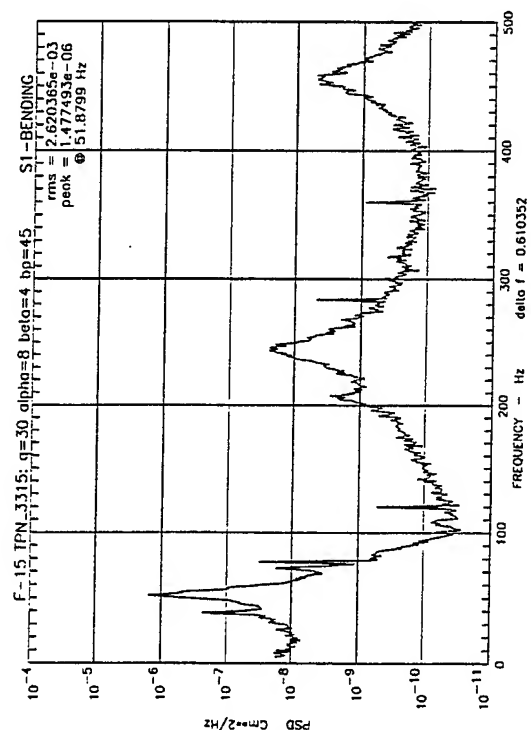
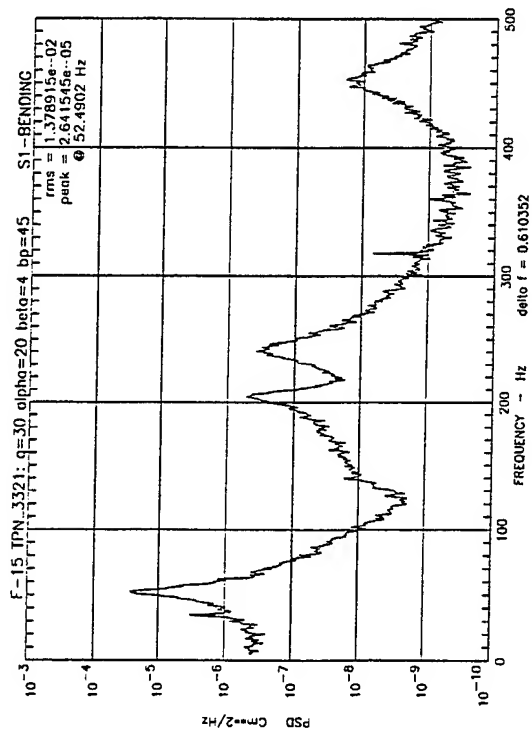


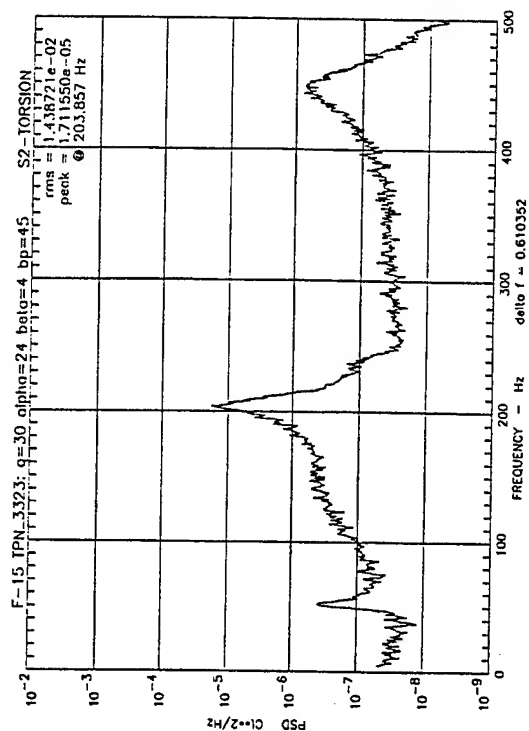
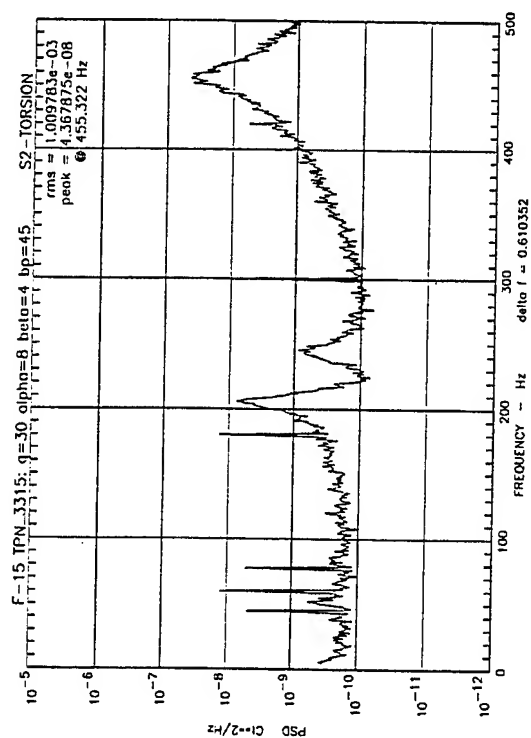
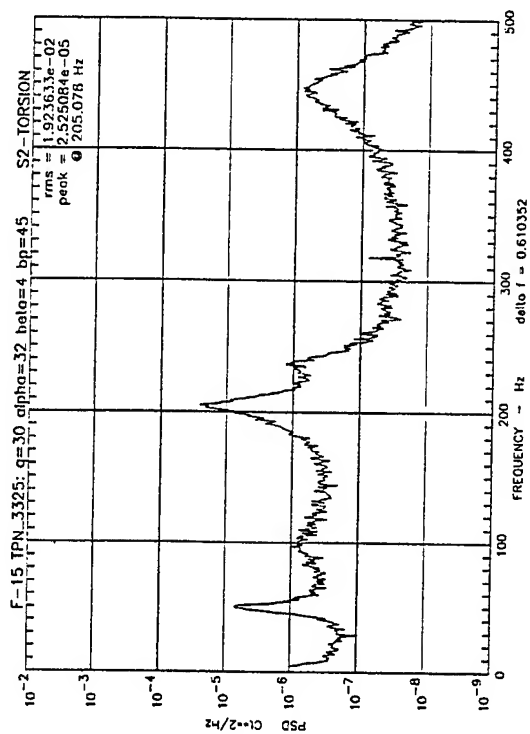
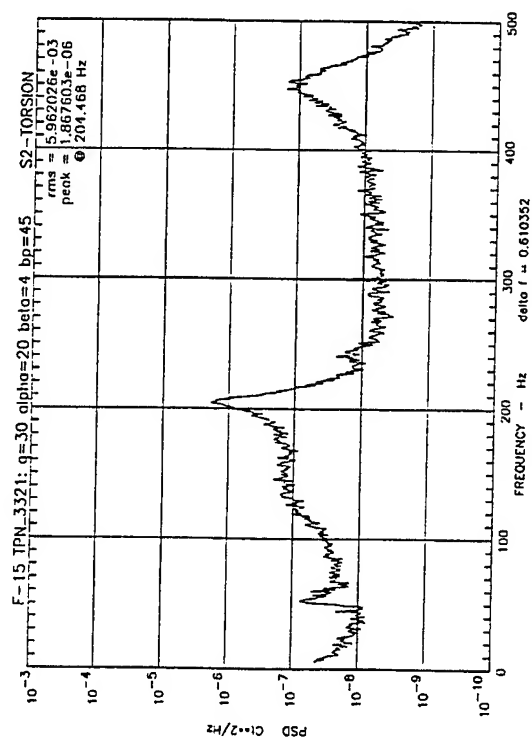


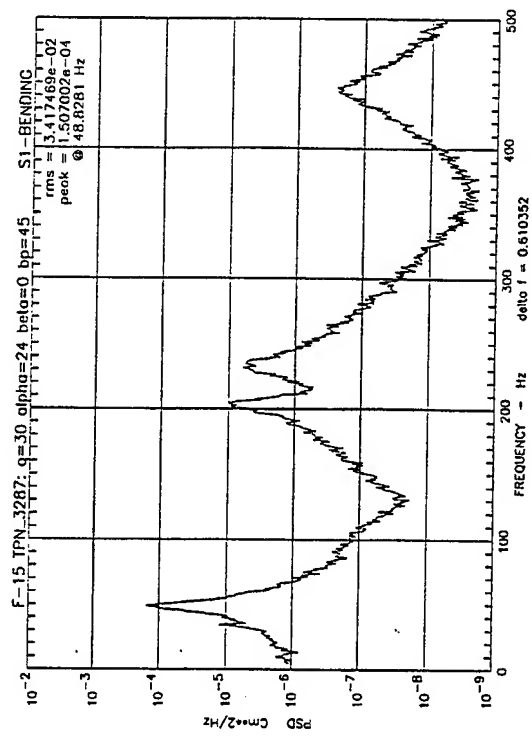
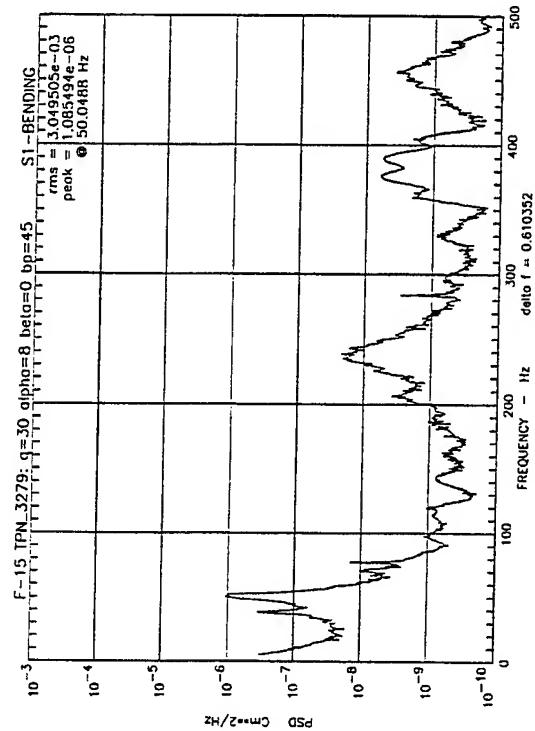
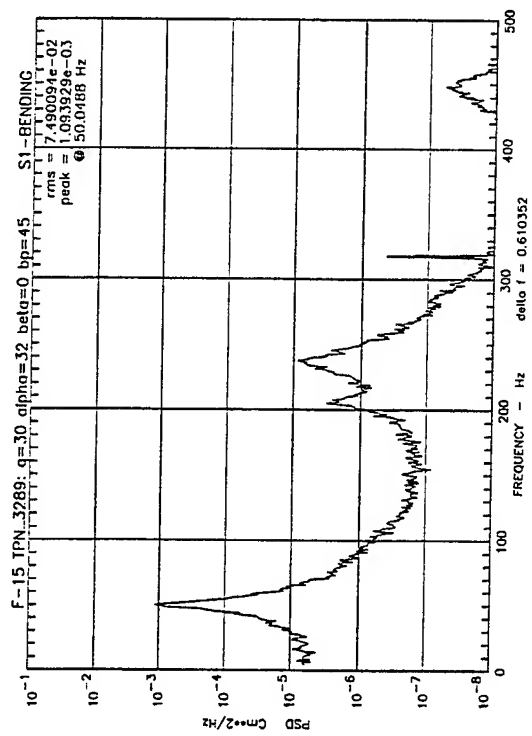
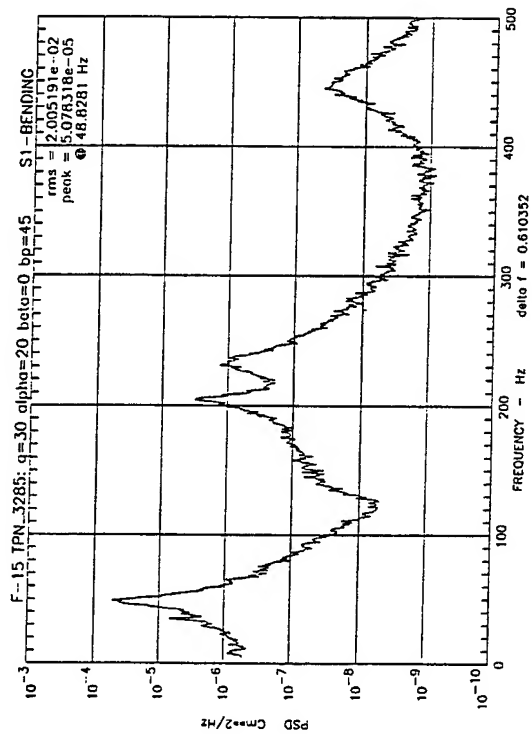


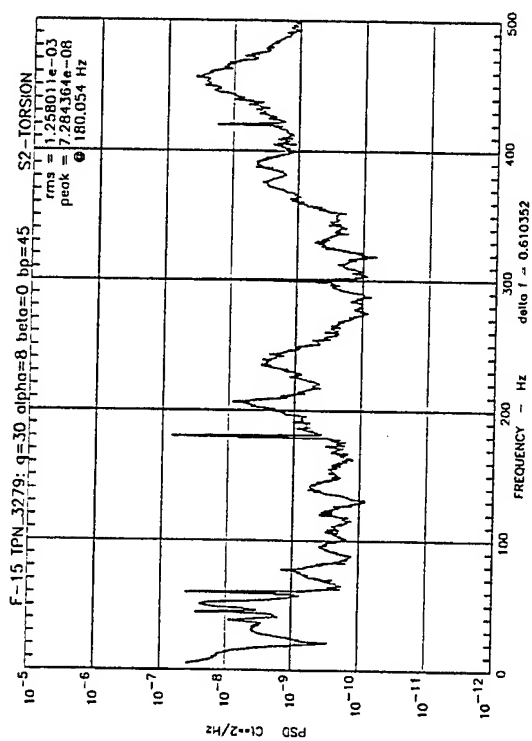
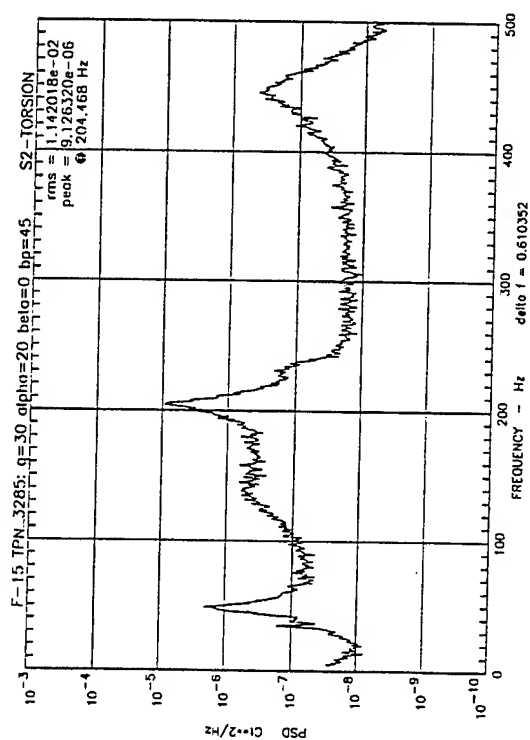
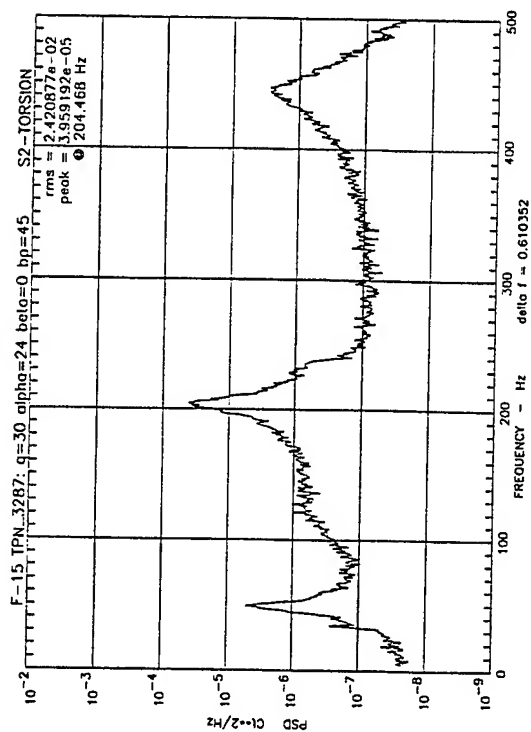
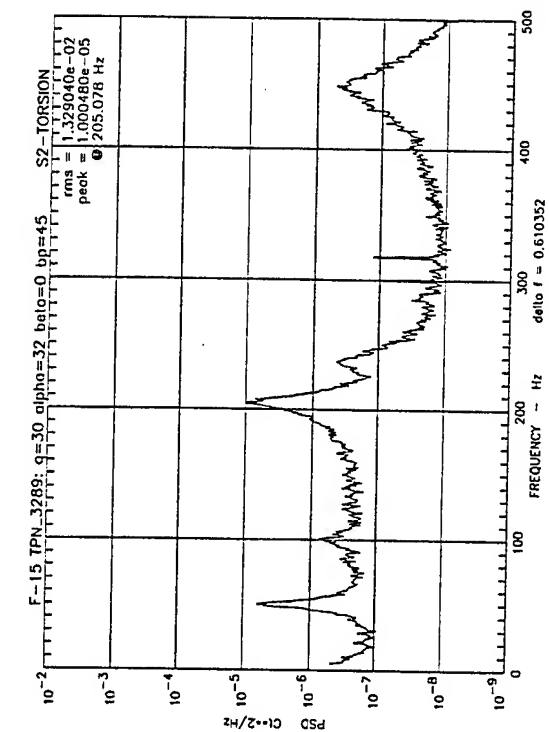


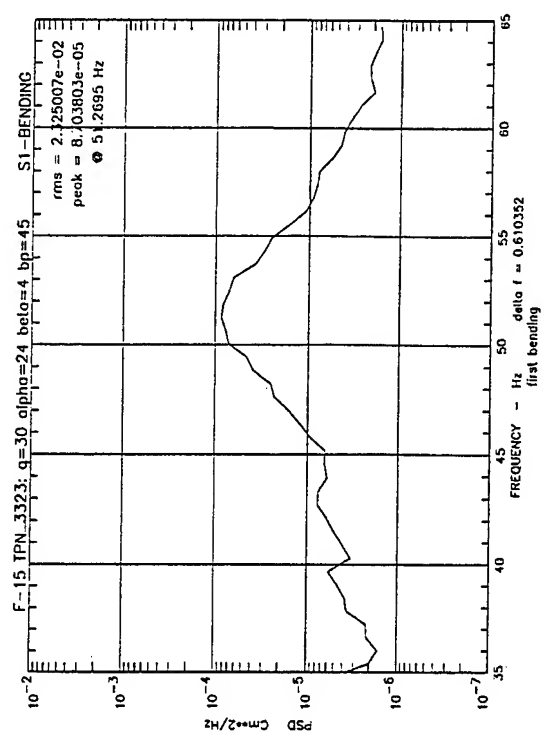
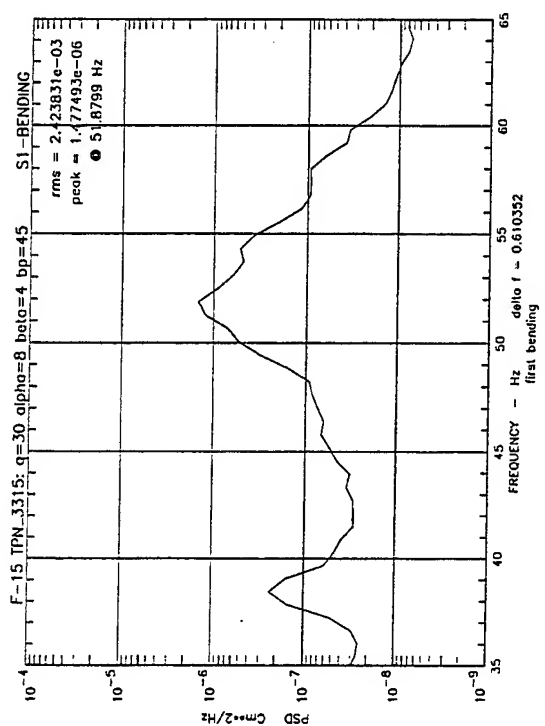
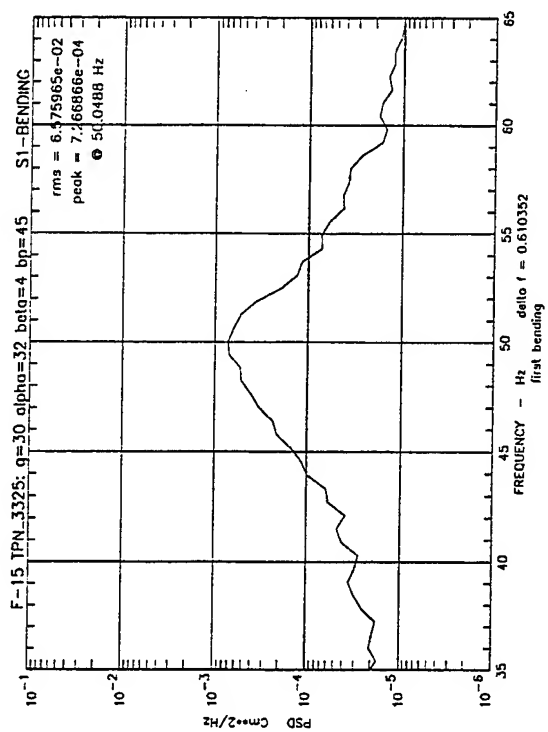
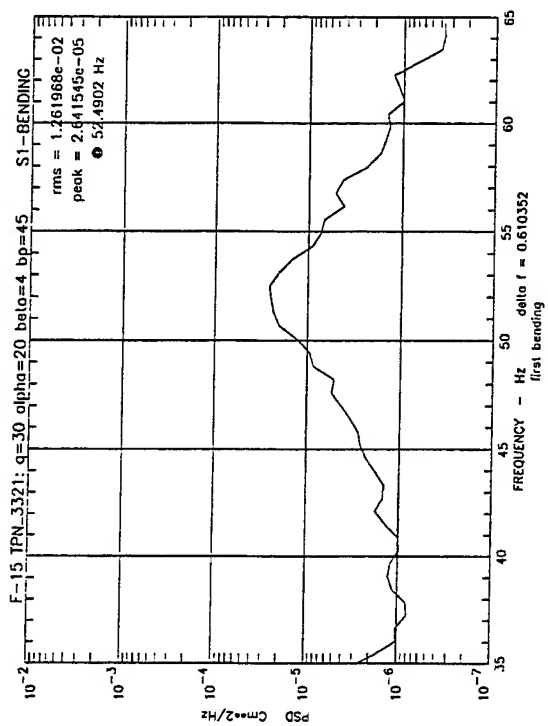




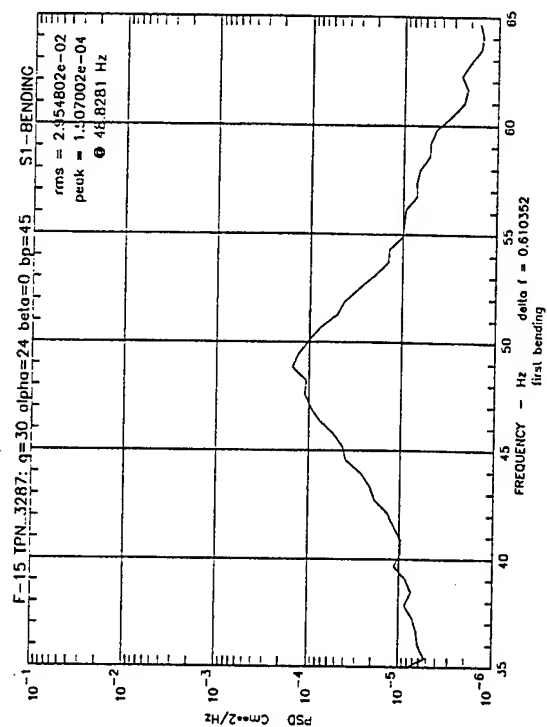
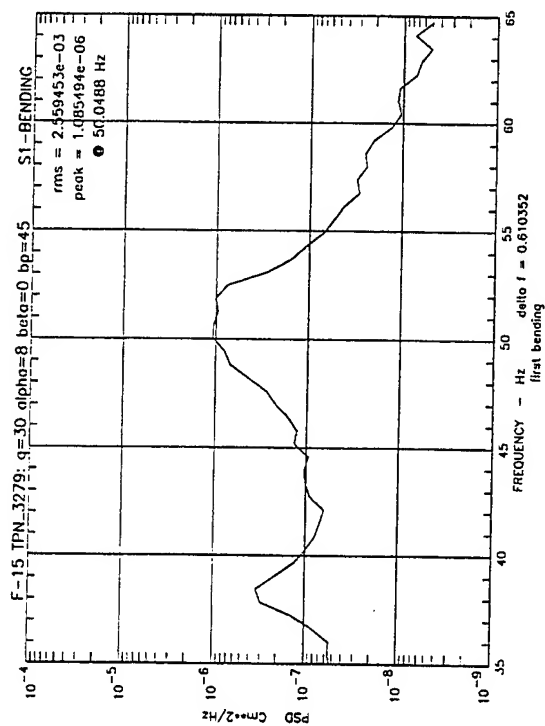
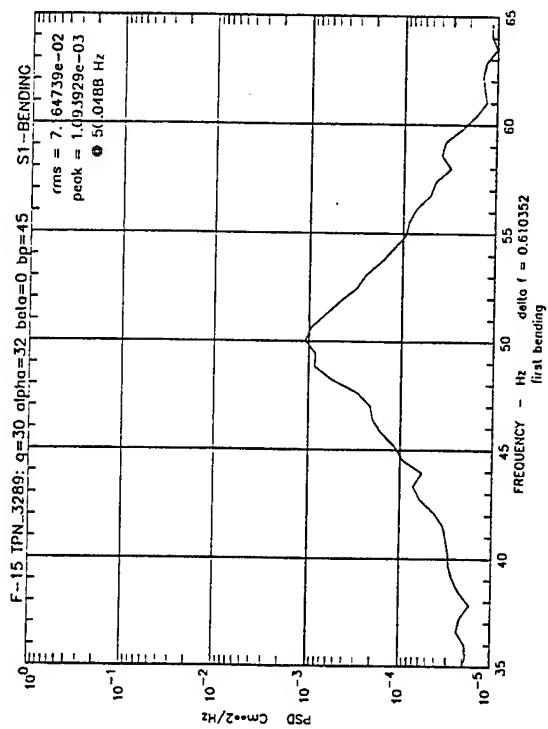
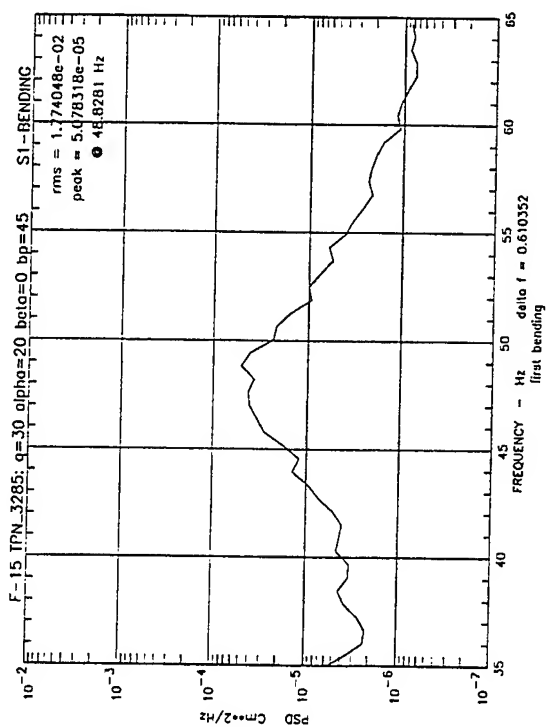


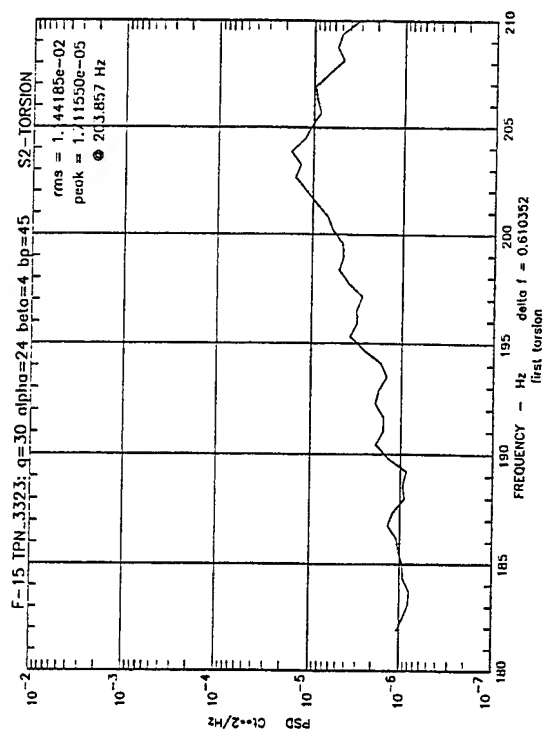
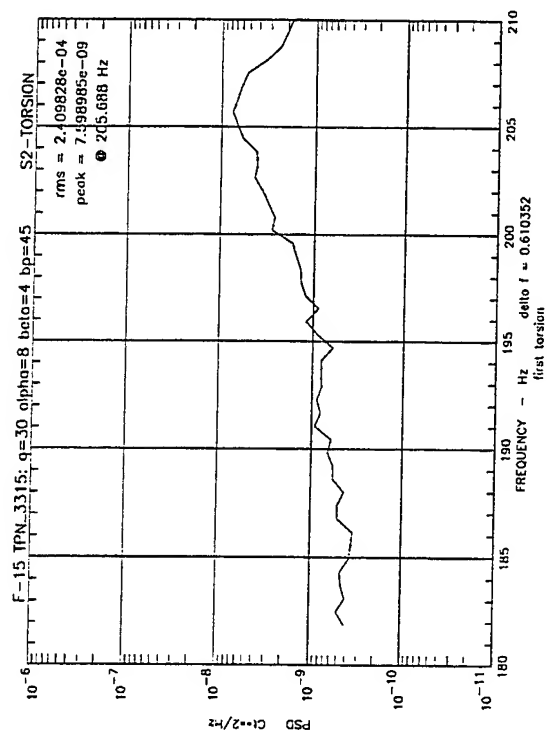
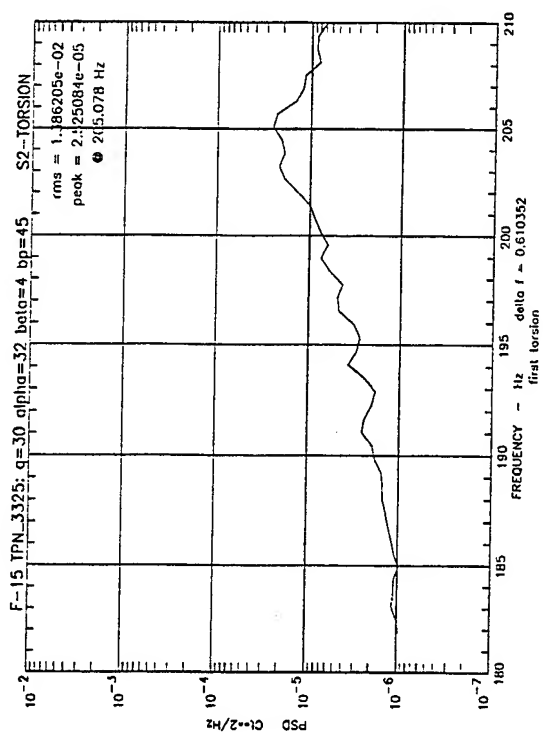
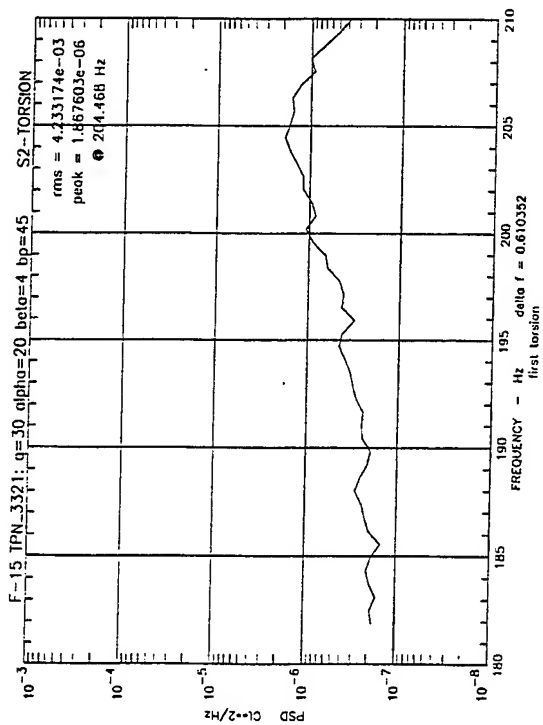


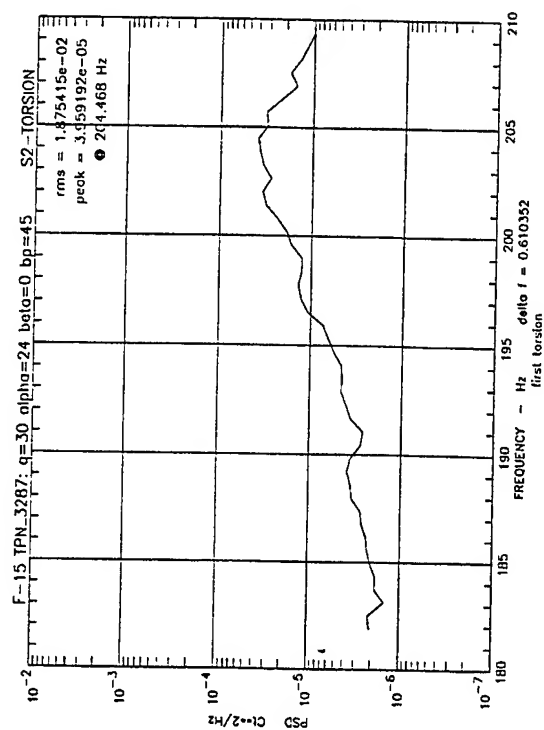
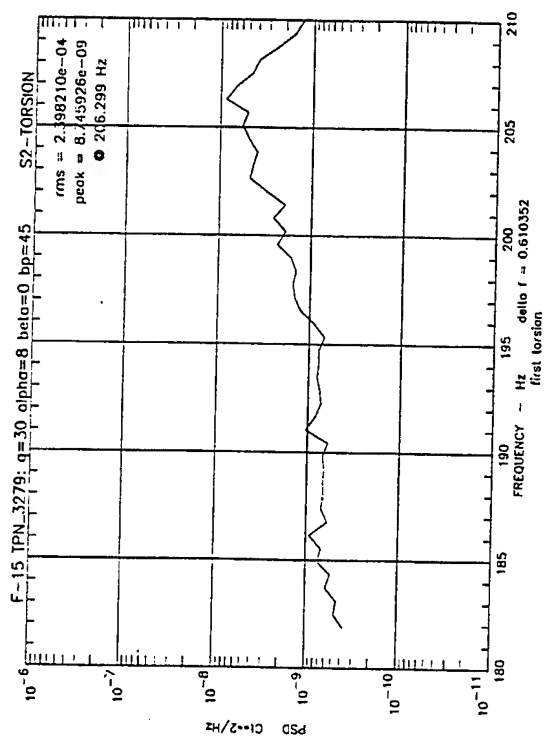
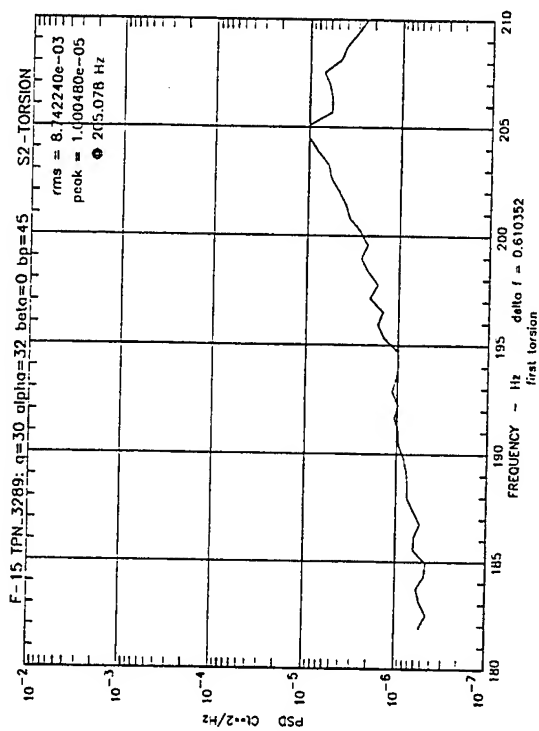
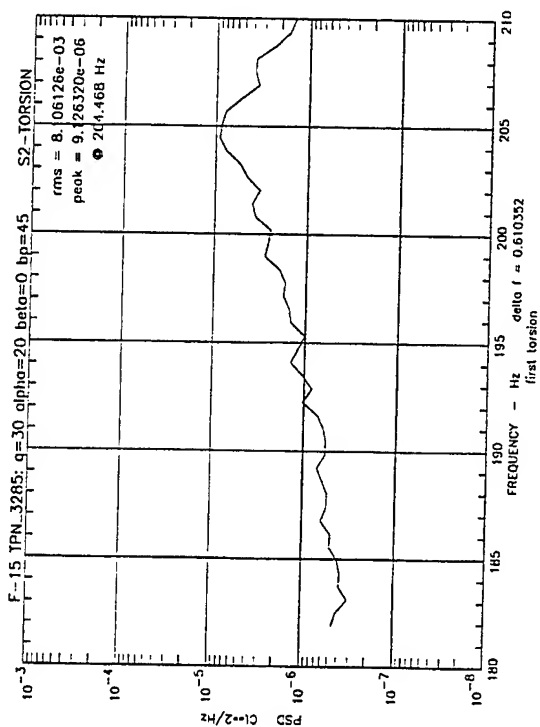


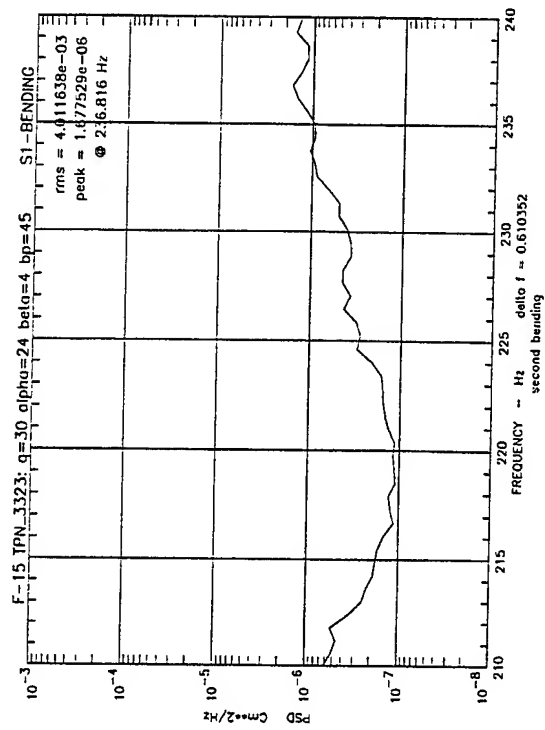
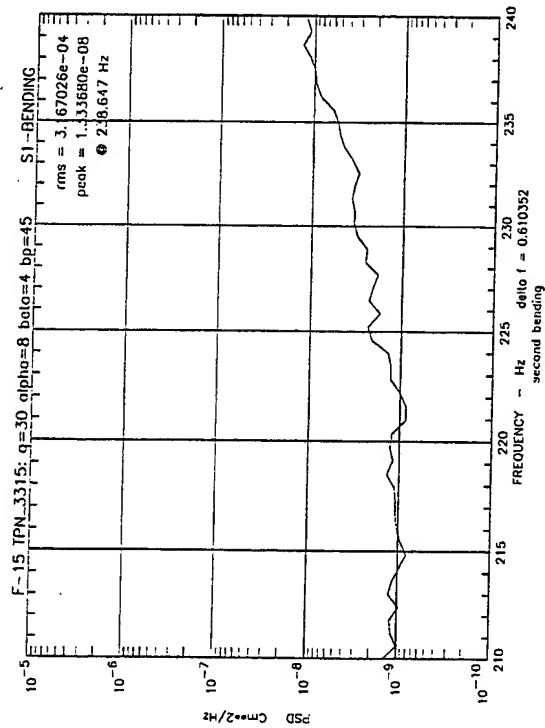
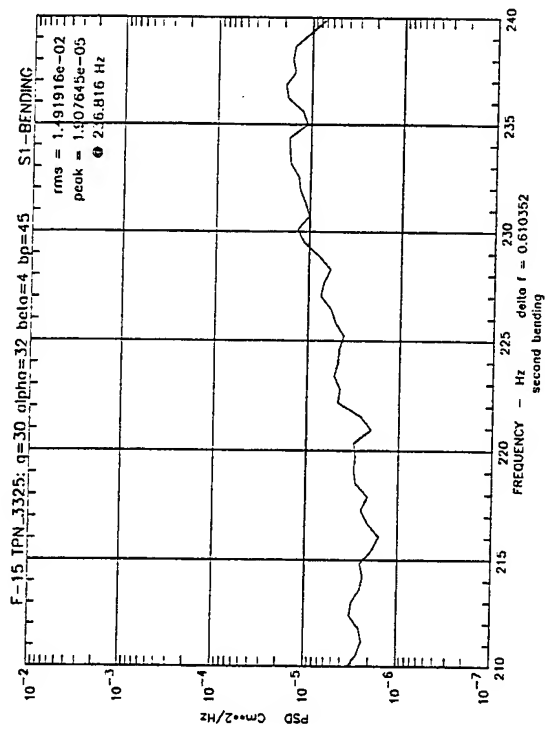
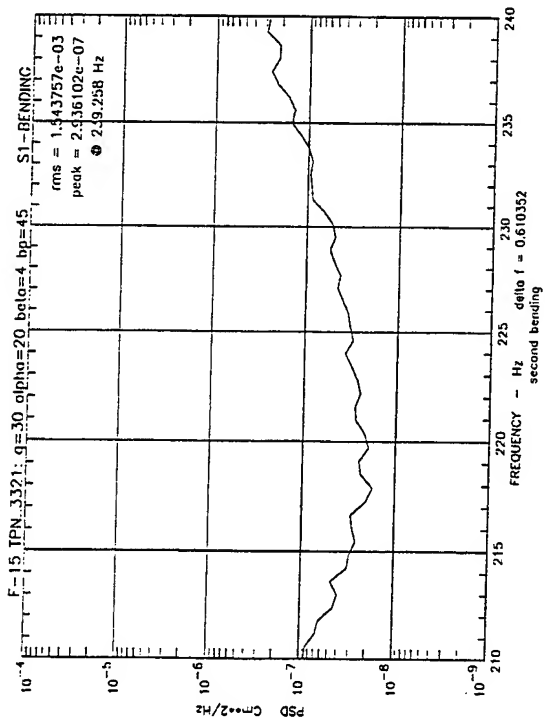


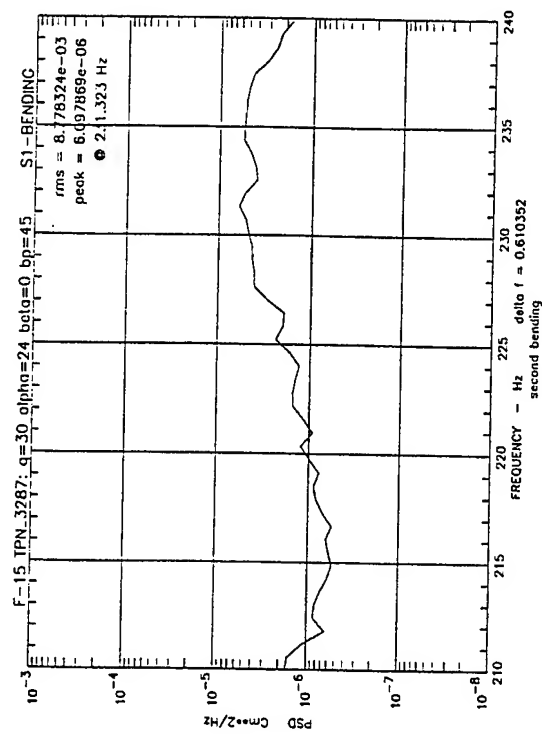
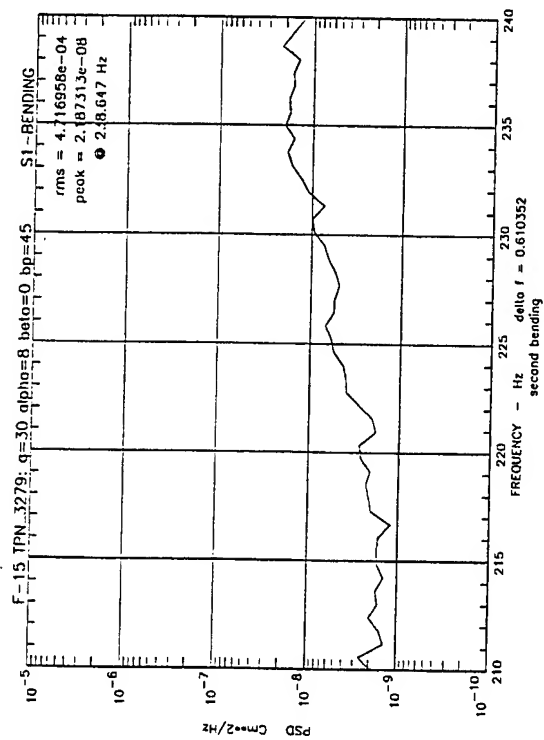
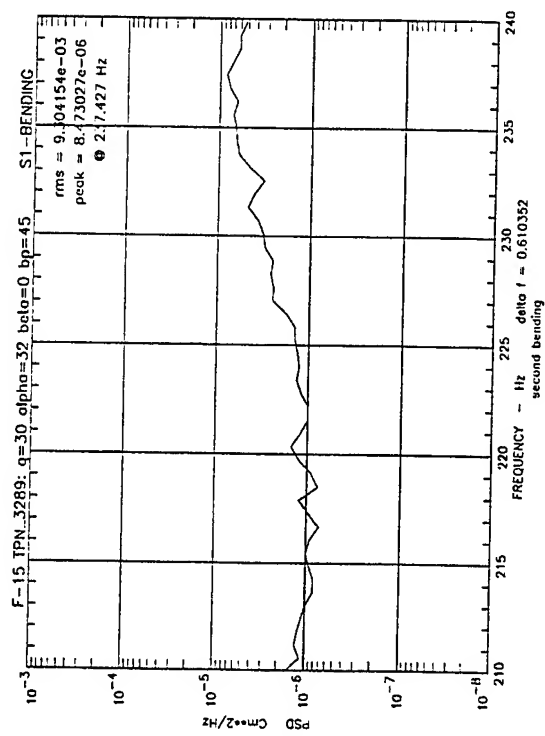
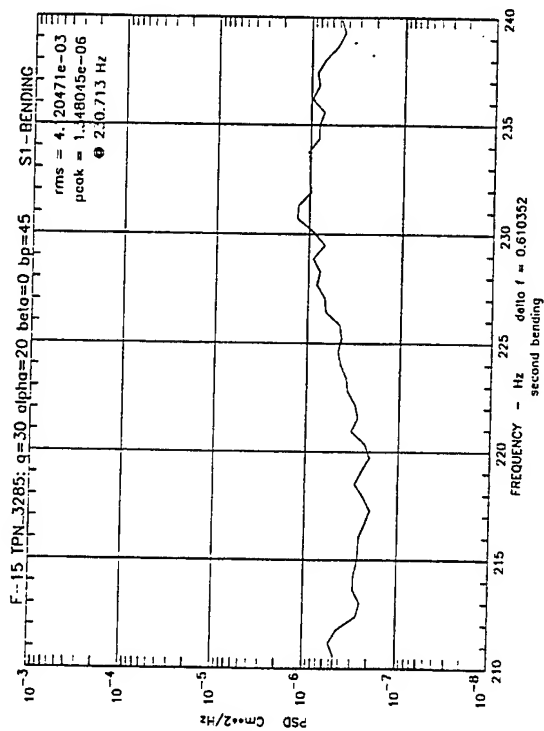












**FLEXIBLE TAIL RESPONSE  
NON DIMENSIONAL BENDING AND TORSION**

**Q= 30 PSF**

**3.2.2 RMS SUMMARY TABS**

**F-15 Vertical Tail Buffet Test: Overall RMS (Cm & Ct nondimensional units), Q=30 psi**

**0 psi blowing pressure:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	8	.00232	.00083	.00214	.00017	.00030
4	20	.01438	.00734	.01310	.00567	.00168
4	24	.03047	.02162	.02657	.01717	.00555
4	32	.07895	.02511	.07289	.01910	.01667
0	8	.00284	.00112	.00262	.00019	.00053
0	20	.02384	.01575	.02088	.01198	.00511
0	24	.03922	.03115	.03288	.02311	.01228
0	32	.09048	.01568	.08712	.01021	.00882

**45 psi blowing pressure:**

<u>Beta</u>	<u>Alpha</u>	<u>bending</u> <u>5-500 Hz</u>	<u>torsion</u> <u>5-500 Hz</u>	<u>1st bending</u> <u>35-65 Hz</u>	<u>1st torsion</u> <u>180-210 Hz</u>	<u>2nd bending</u> <u>210-240 Hz</u>
4	8	.00262	.00101	.00242	.00024	.00032
4	20	.01379	.00596	.01262	.00423	.00154
4	24	.02580	.01439	.02325	.01144	.00401
4	32	.07075	.01924	.06576	.01386	.01492
0	8	.00305	.00126	.00256	.00024	.00047
0	20	.02005	.01142	.01774	.00811	.00412
0	24	.03417	.02421	.02955	.01875	.00878
0	32	.07490	.01329	.07165	.00874	.00930

## **FLEXIBLE TAIL RESPONSE**

### **4. ACCELERATION DATA - LINEAR, BENDING AND TORSION**

#### **4.1 PSD GRAPHS**

##### **4.1.1 Q = 56 PSF**

###### **4.1.1.1 FWD AND AFT ACCELS**

###### **4.1.1.2 BENDING (LINEAR at EA)**

###### **4.1.1.3 TORSIONAL ( ANGULAR AT EA)**

##### **4.1.2 Q=30PSF**

###### **4.1.2.1 FWD AND AFT ACCELS.- PSDS**

###### **4.1.2.2 BENDING (LINEAR at EA)**

###### **4.1.2.3 TORSIONAL ( ANGULAR AT EA**

#### **4.2 RMS SUMMARY TABLES**



**FLEXIBLE TAIL RESPONSE  
ACCELERATION DATA**

**Q= 56 PSF**

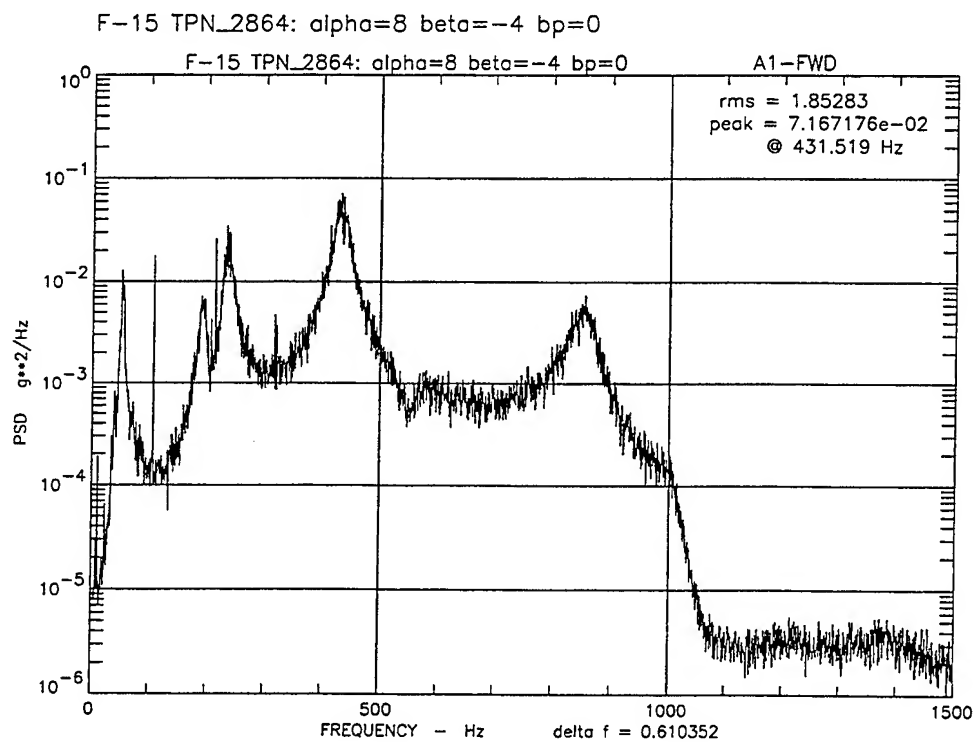
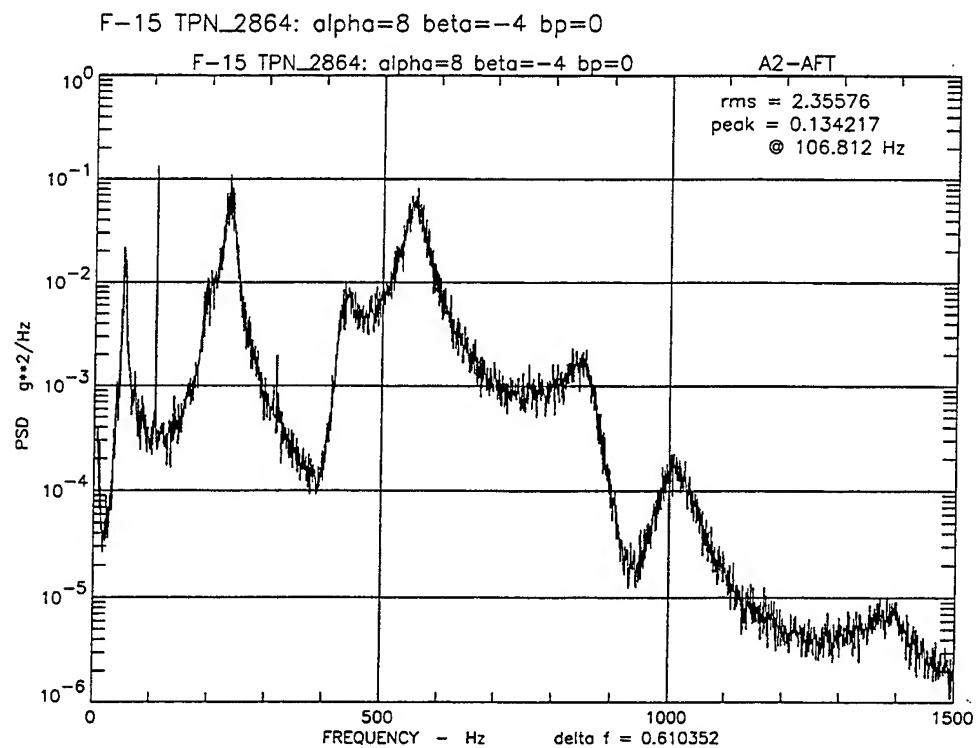
**PSD GRAPHS**

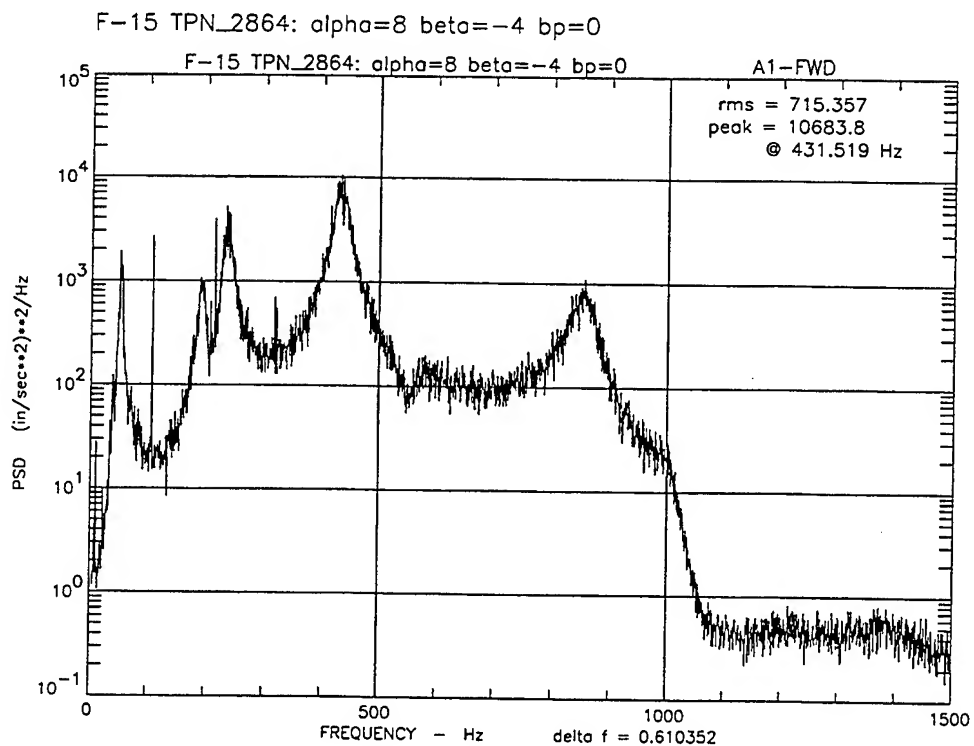
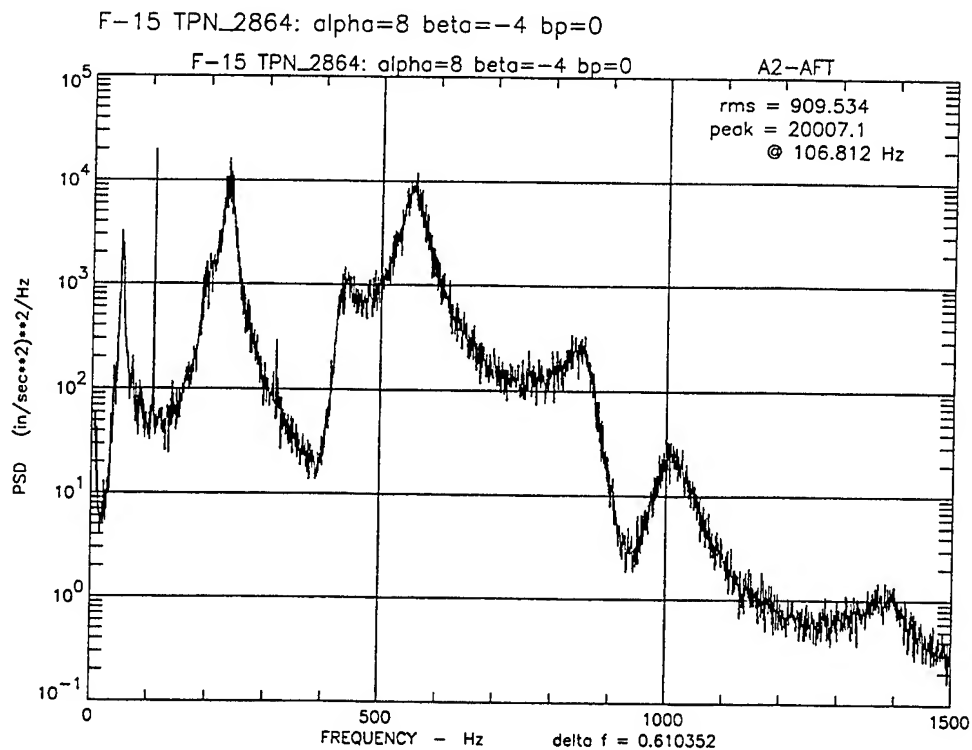
**4.1.1.1 FWD AND AFT ACCELS, beta= 0, +4, -4 Deg, WBP = 0, 45, 65 psi**

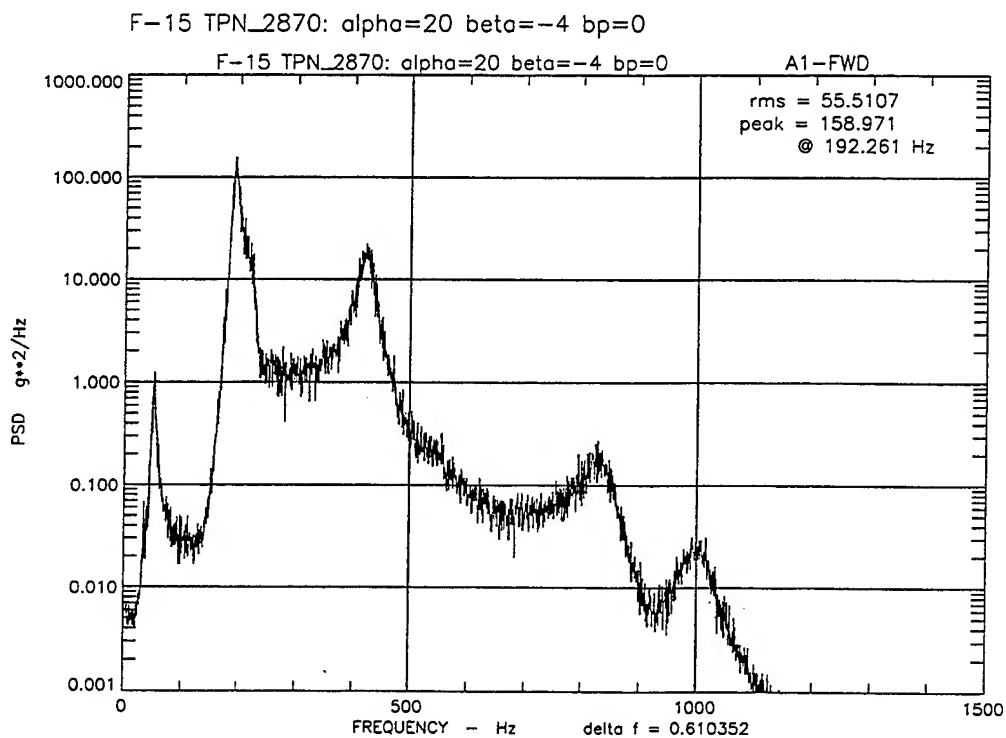
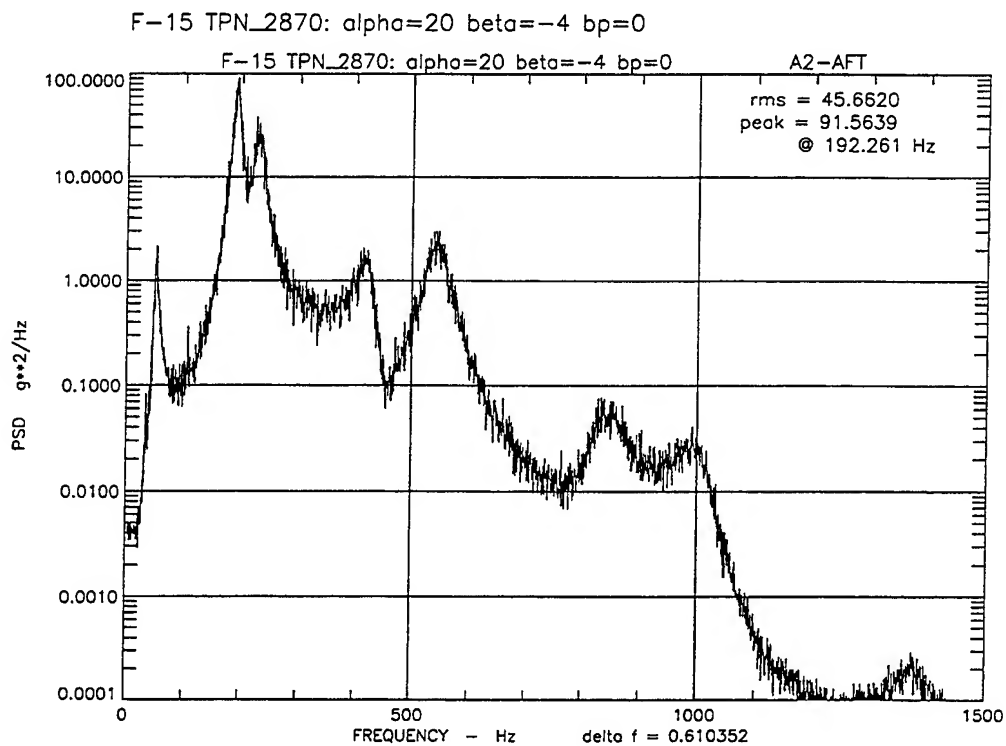
**ALPHAS = 8, 20, 24, 32 DEG**

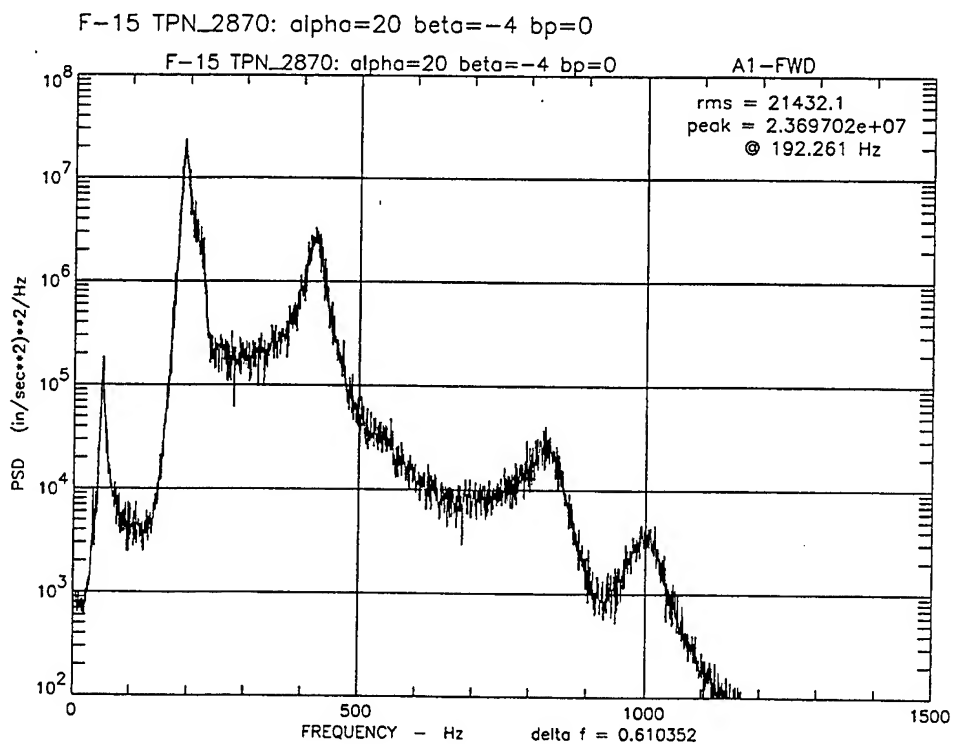
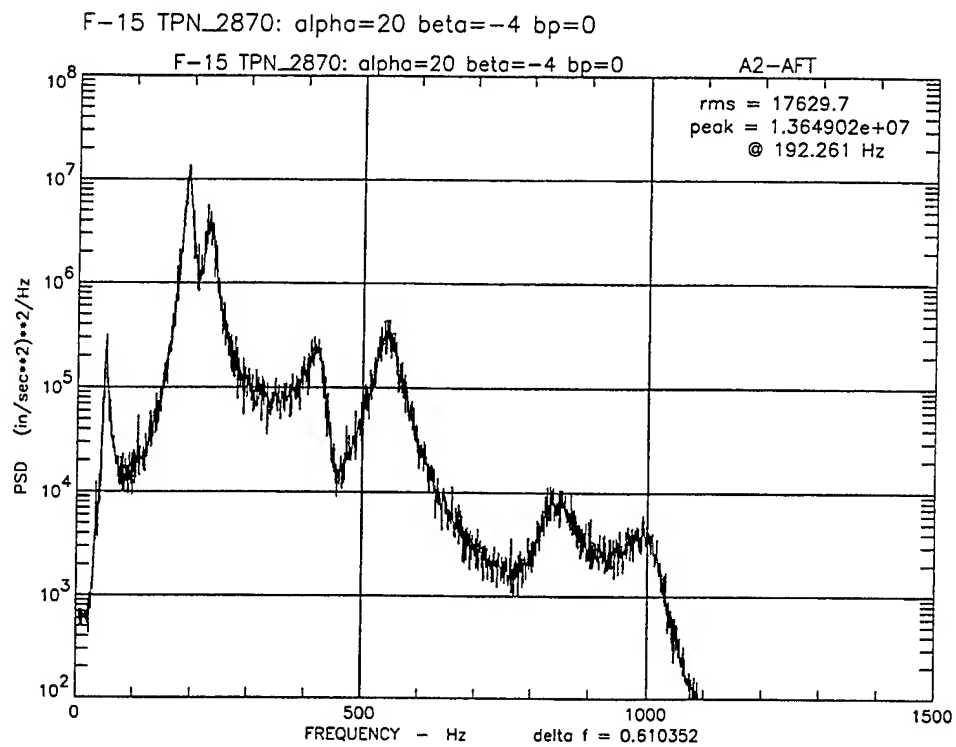
**( note, the dimensional graph ,  $(\text{in/sec})^2/\text{hz}$  is followed by a graph  $(\text{g's})^2/\text{hz}$**

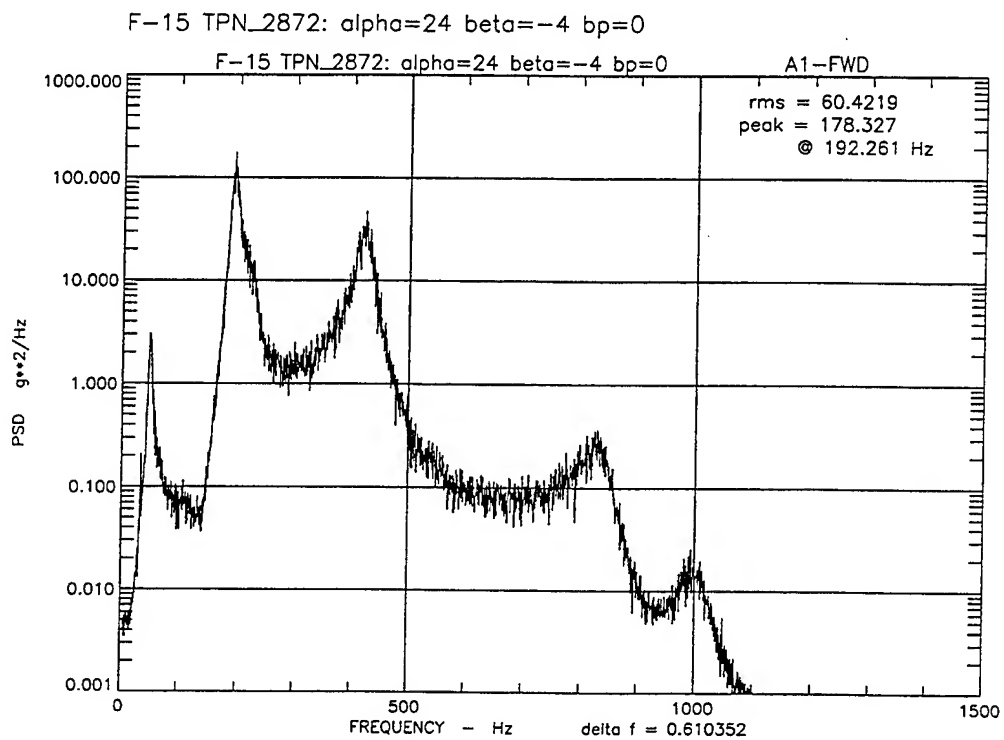
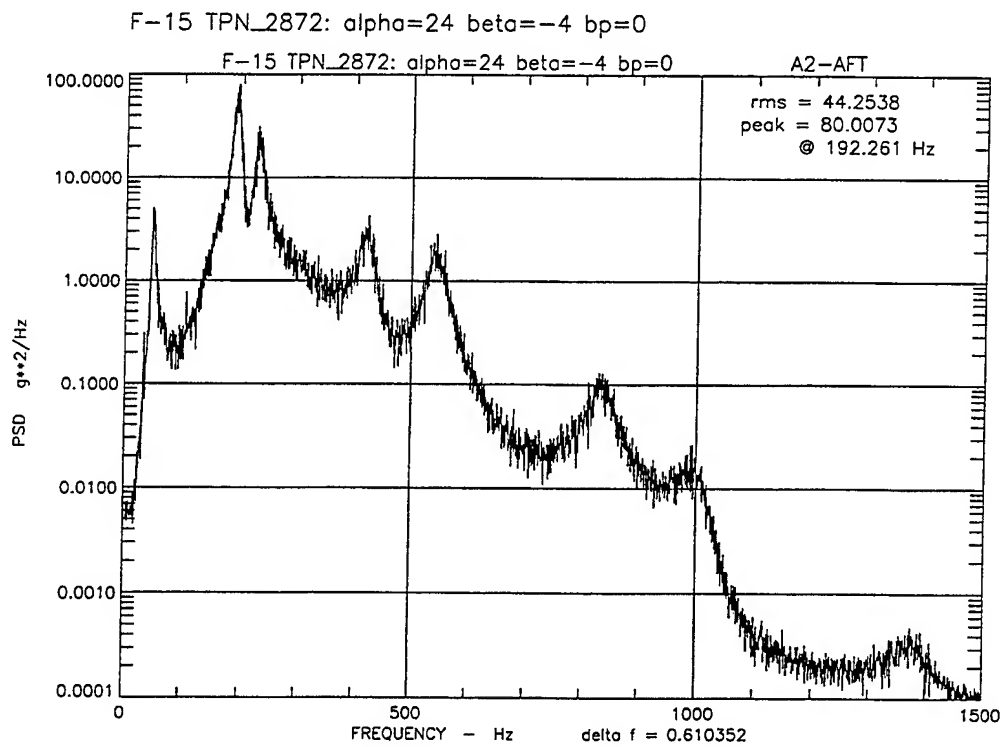
**data is blocked off by blowing pressures, with beta variation within**

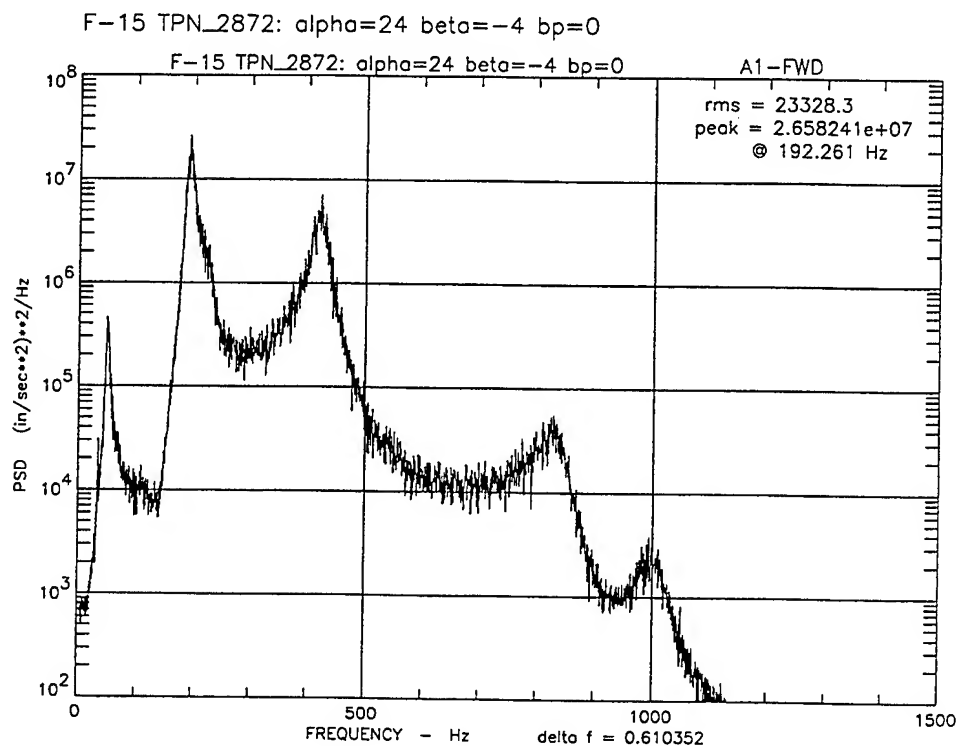
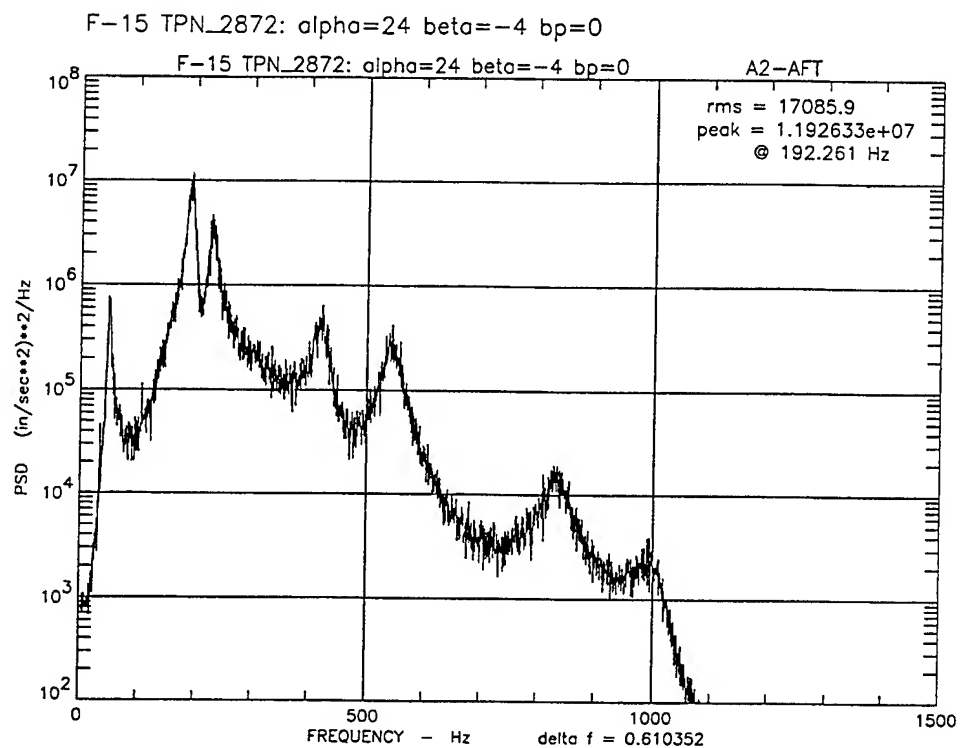


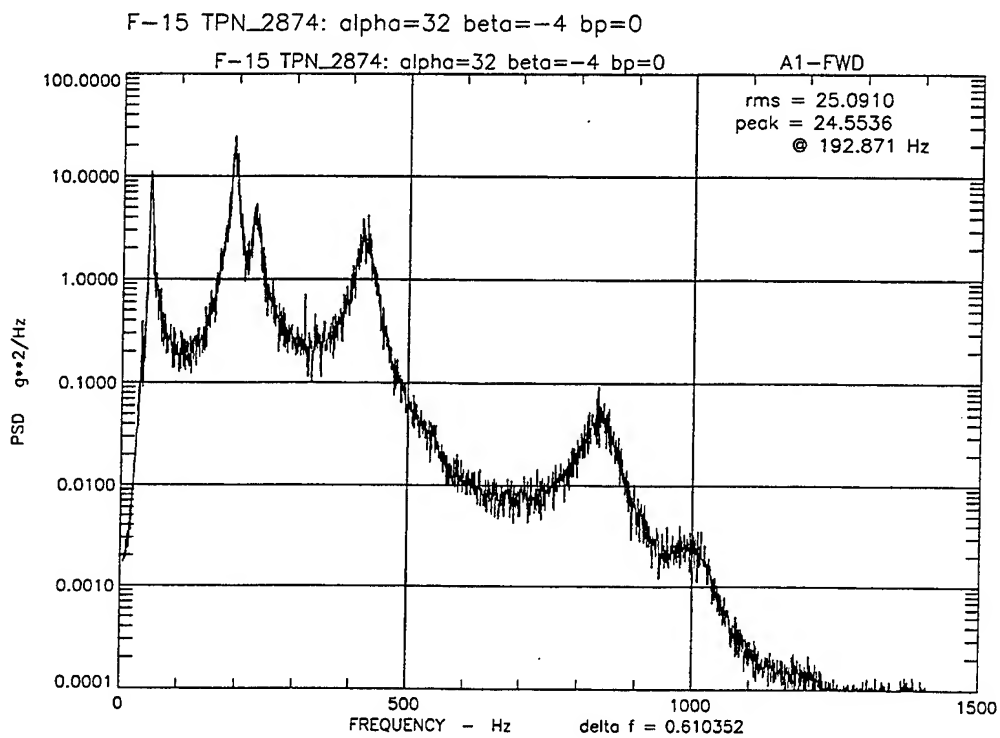
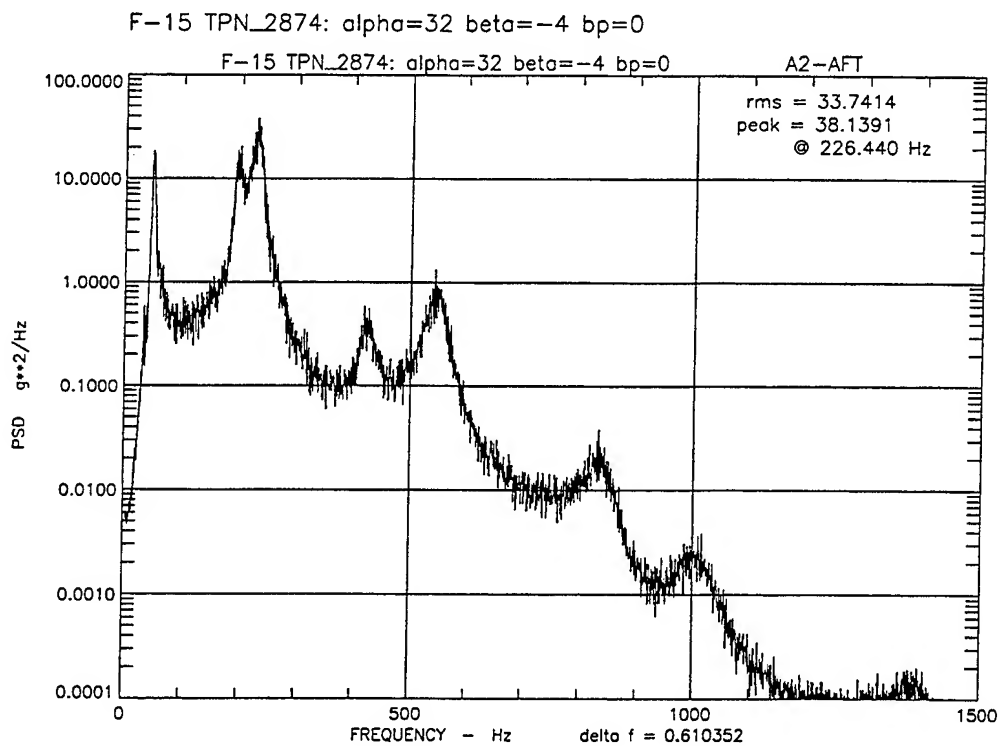






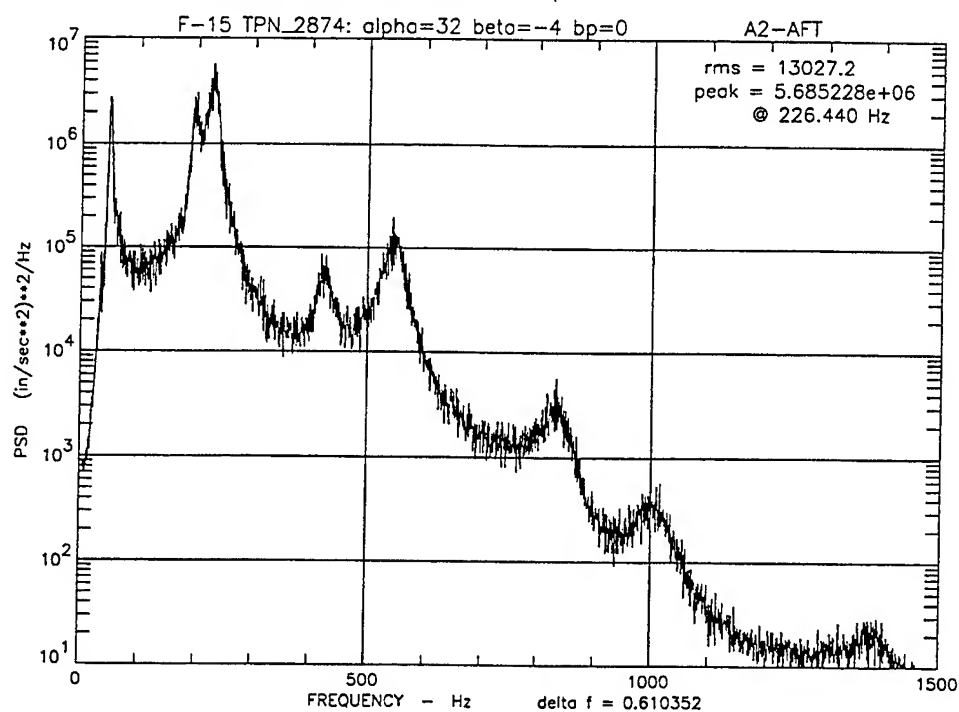




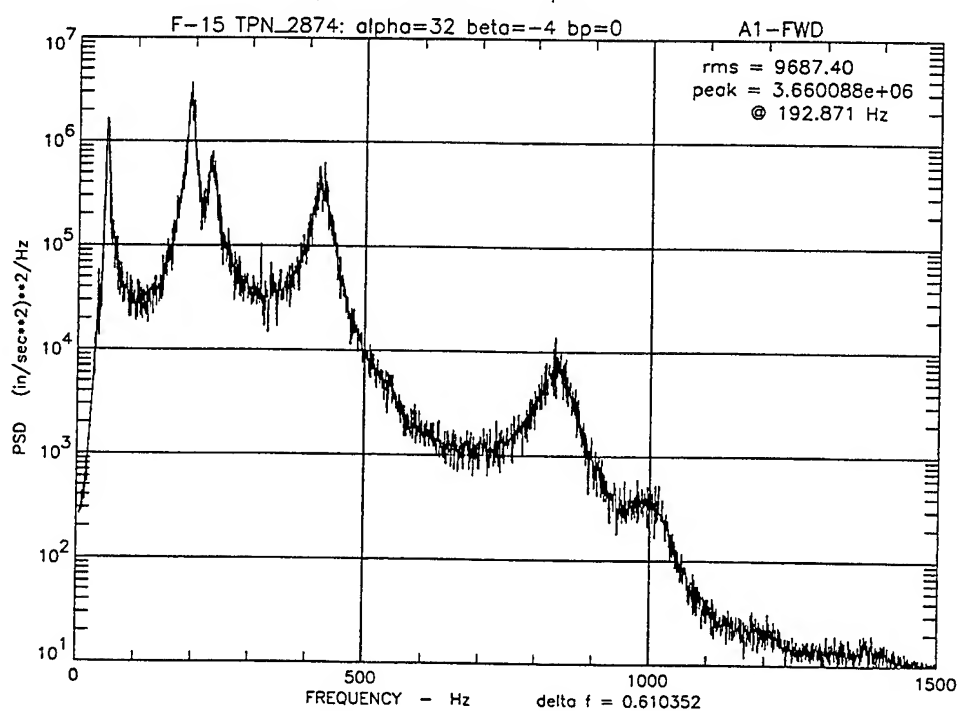




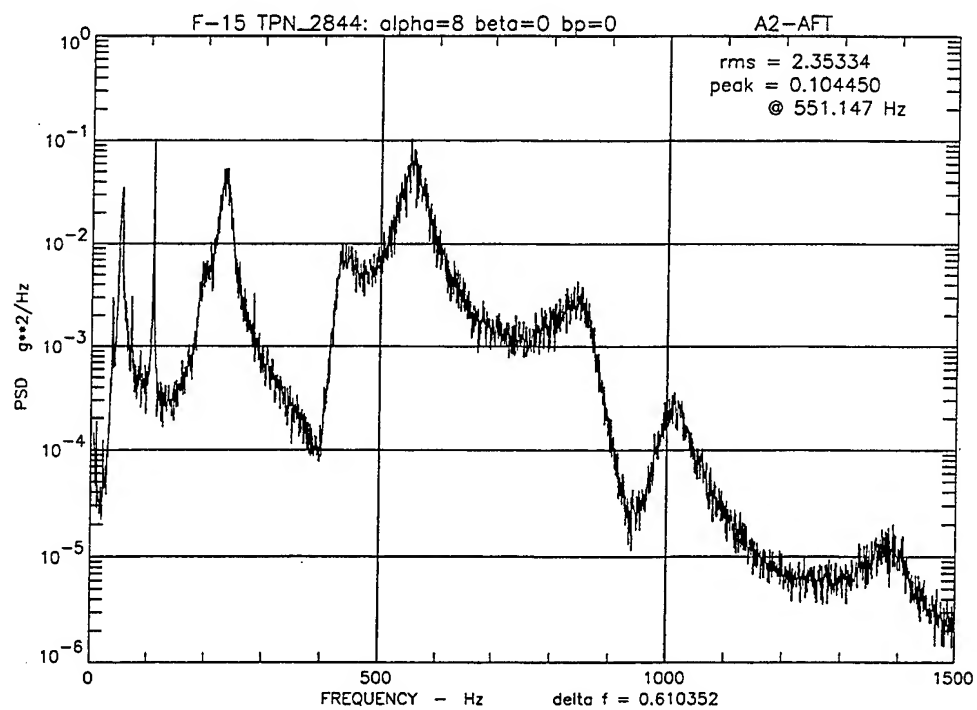
F-15 TPN\_2874: alpha=32 beta=-4 bp=0



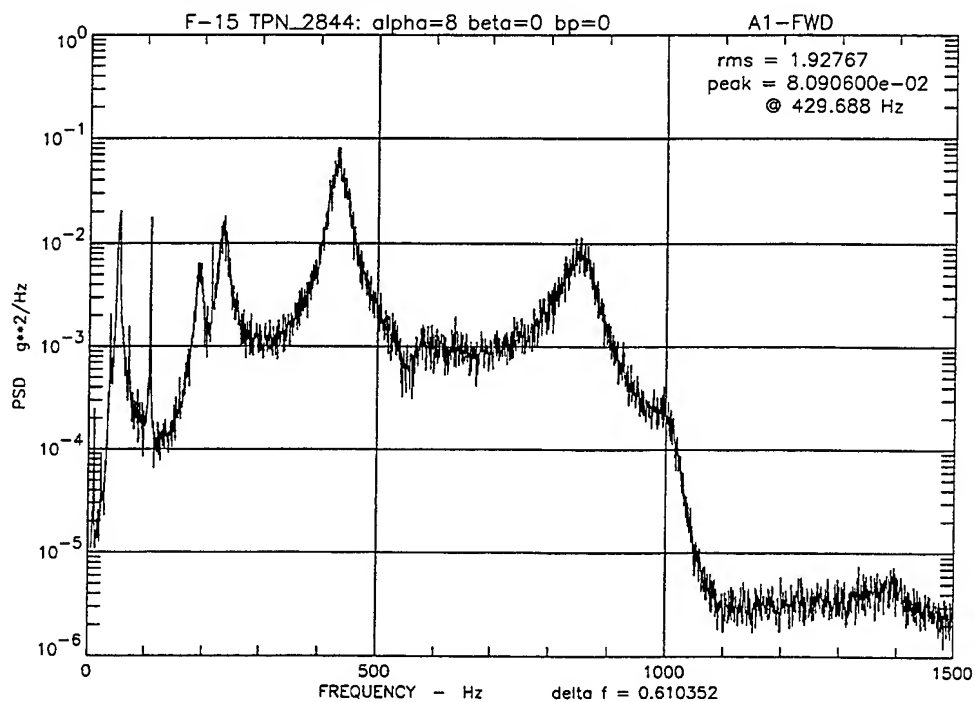
F-15 TPN\_2874: alpha=32 beta=-4 bp=0

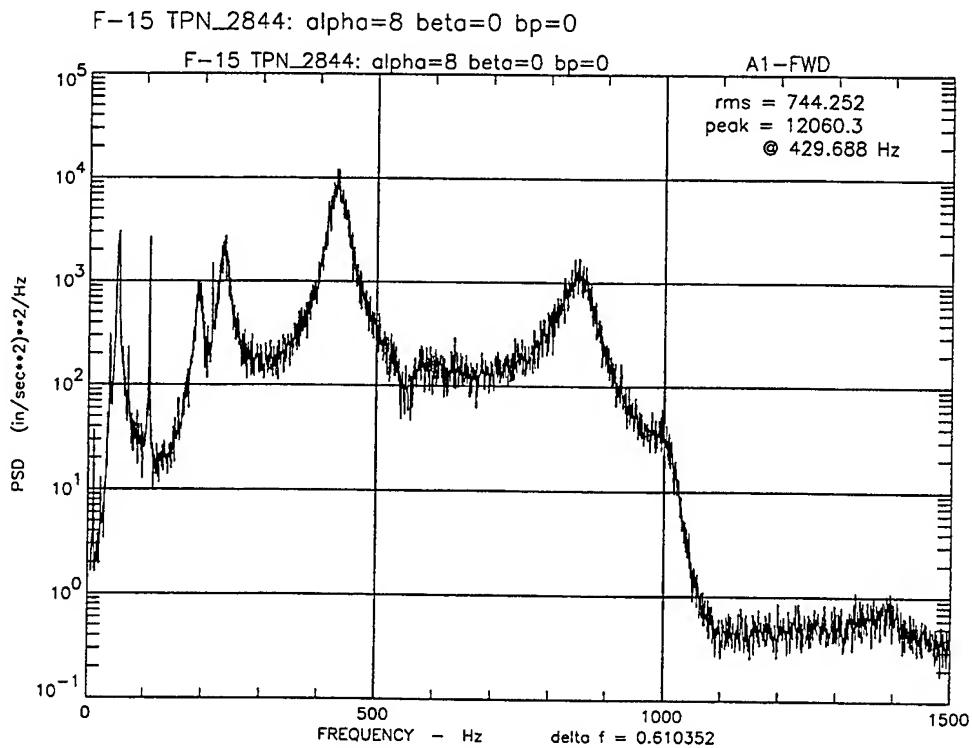
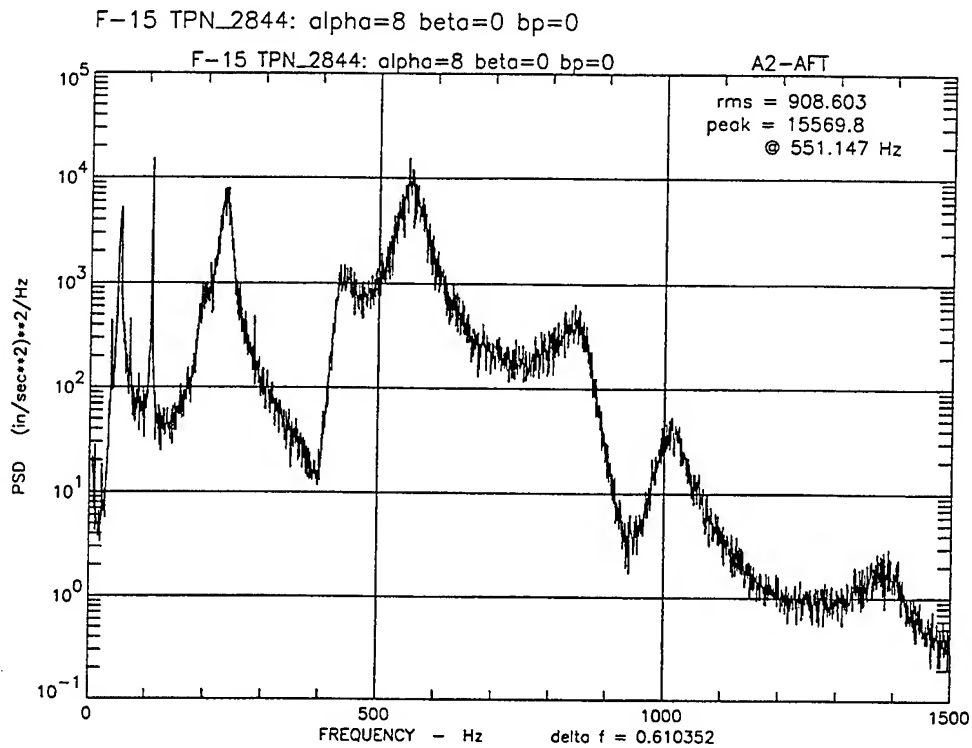


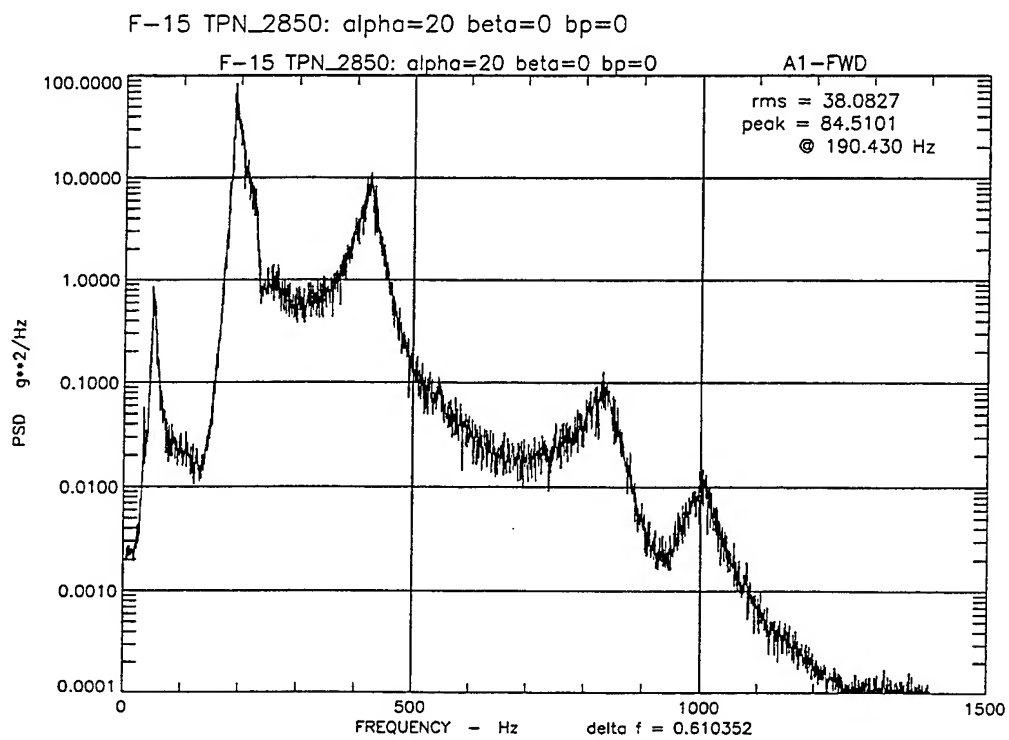
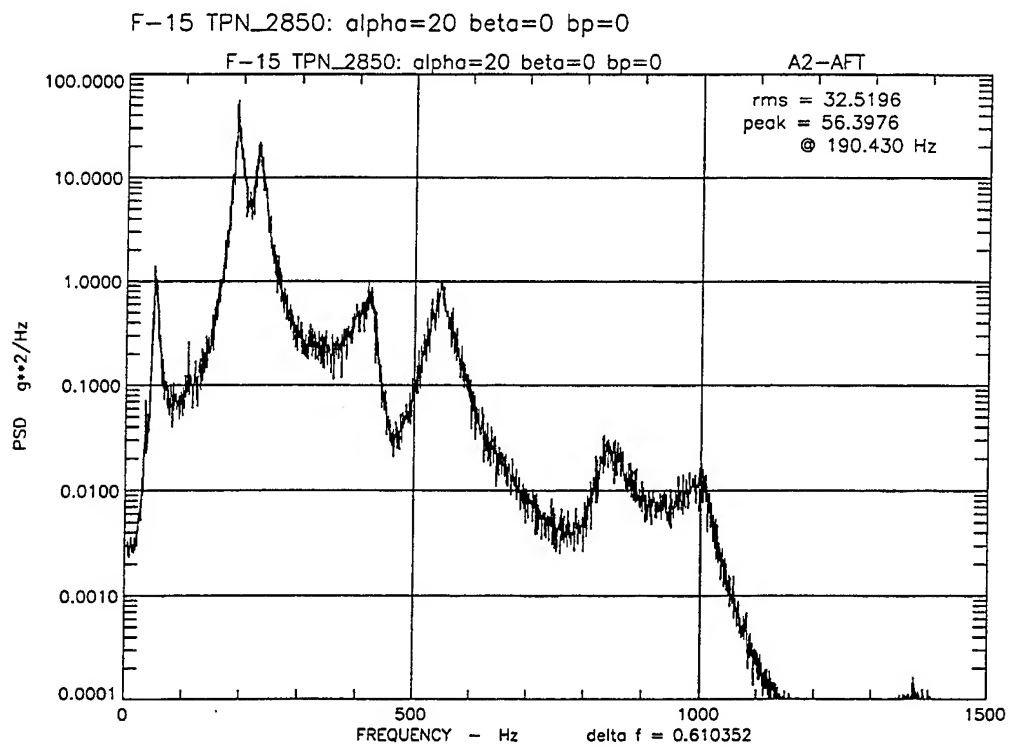
F-15 TPN\_2844: alpha=8 beta=0 bp=0

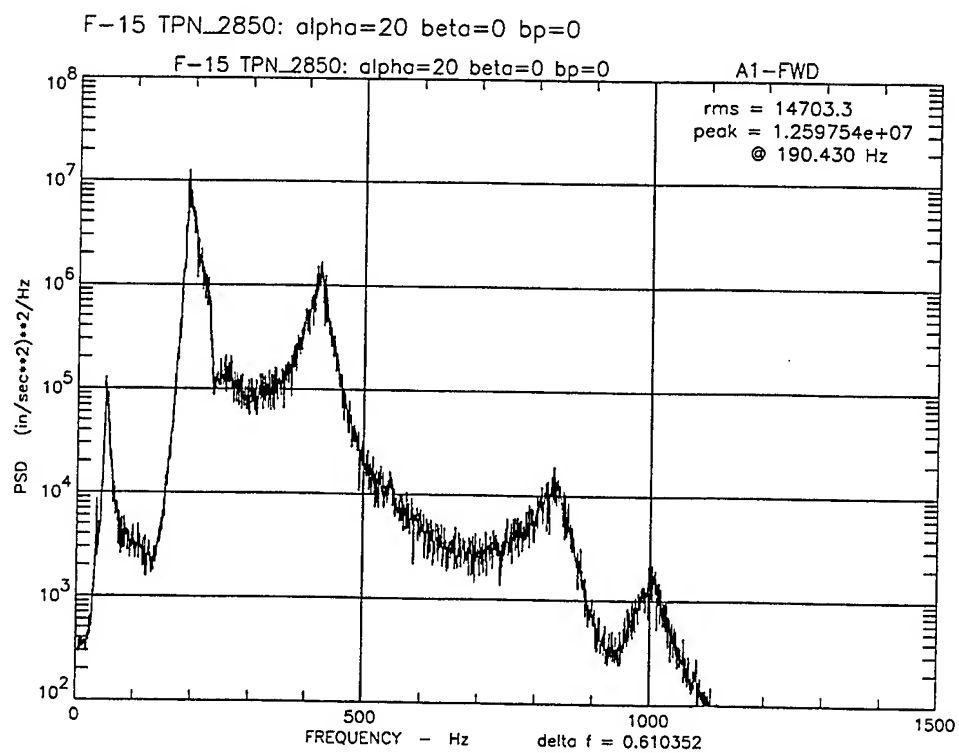
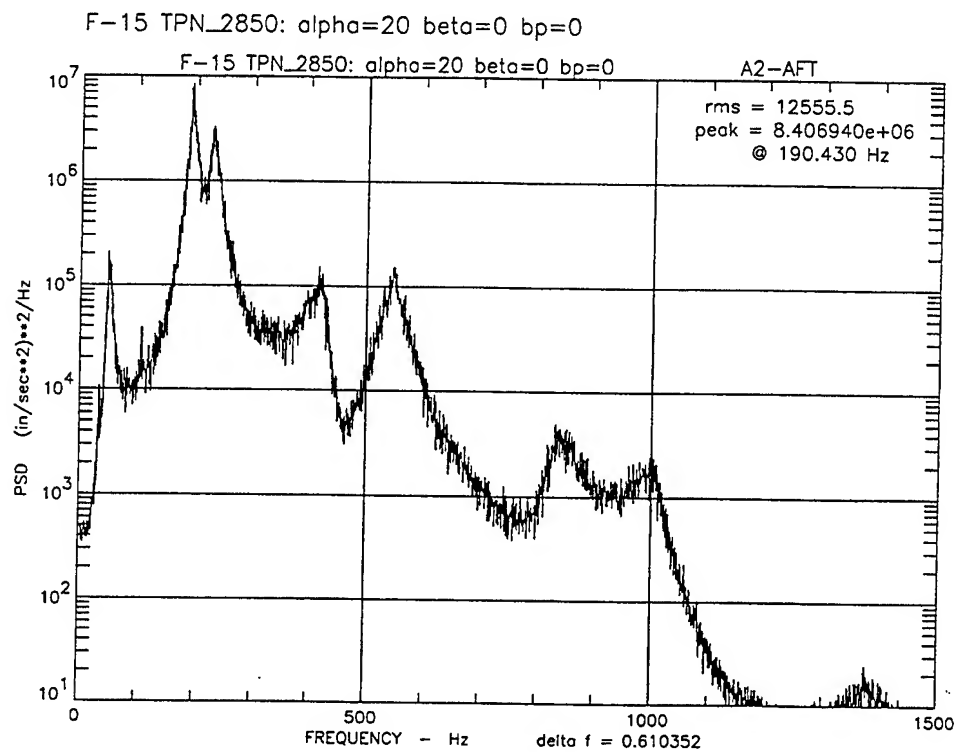


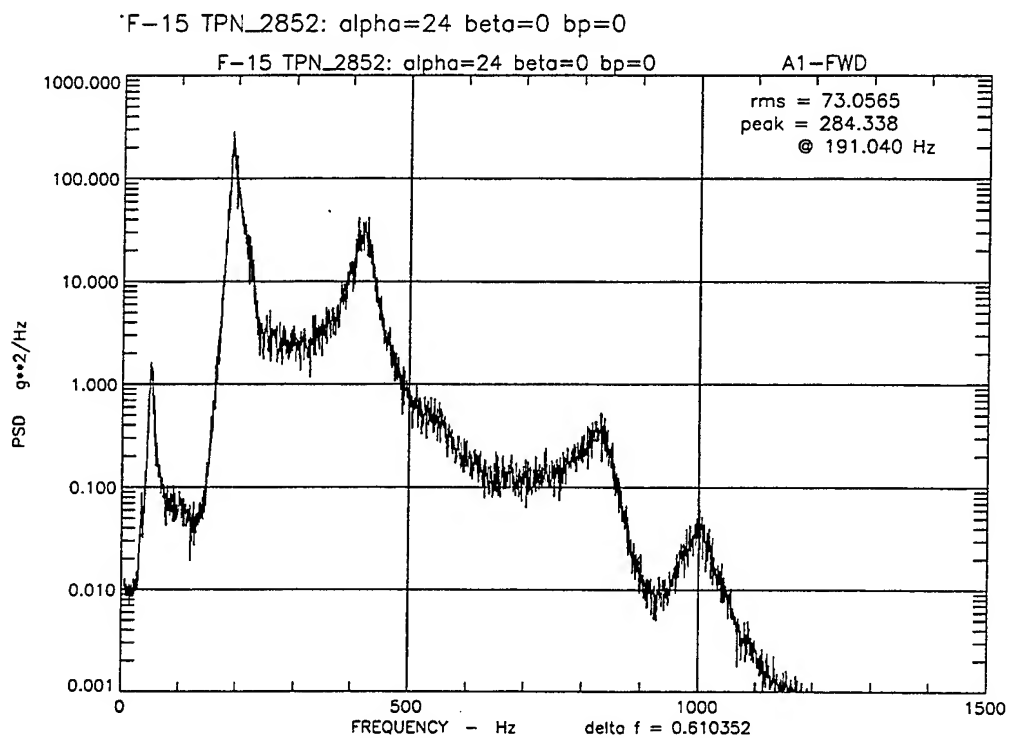
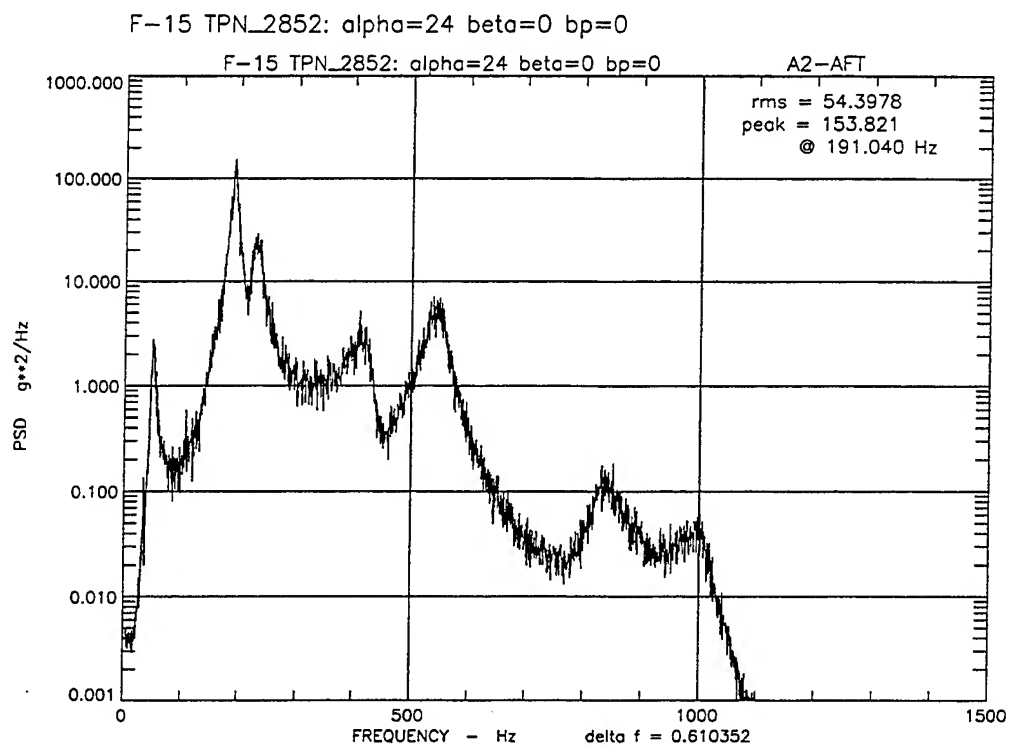
F-15 TPN\_2844: alpha=8 beta=0 bp=0

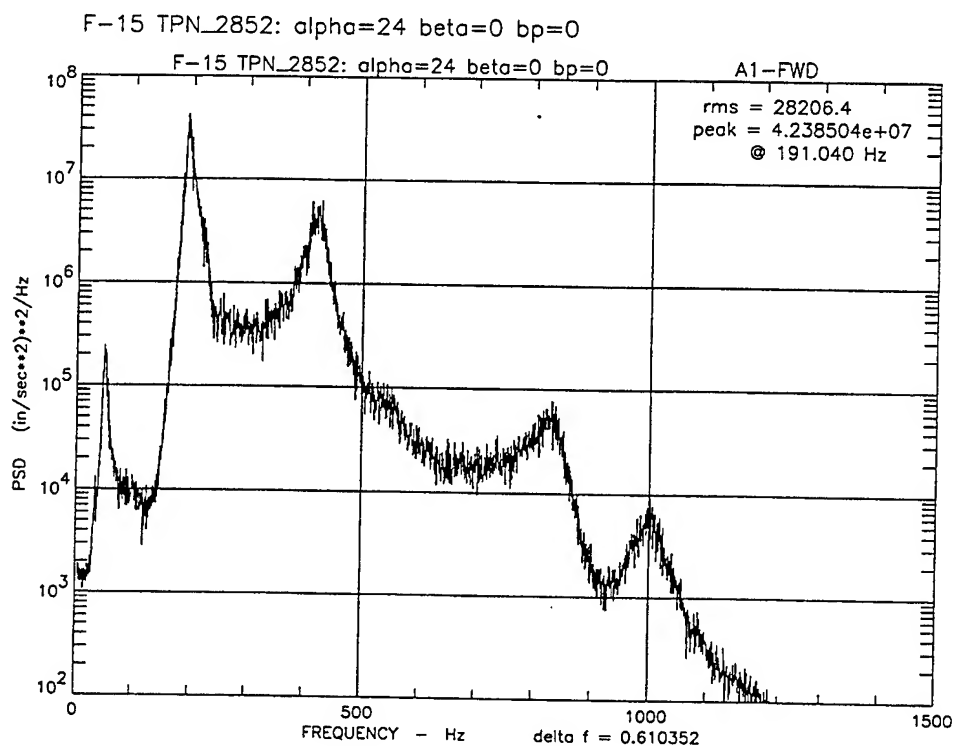
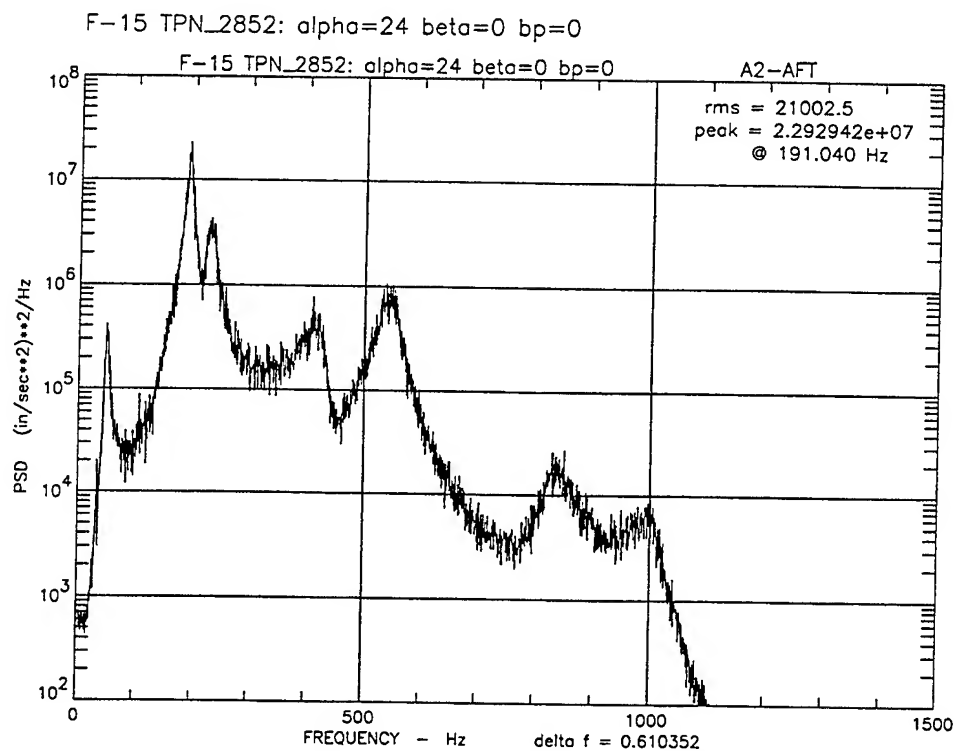


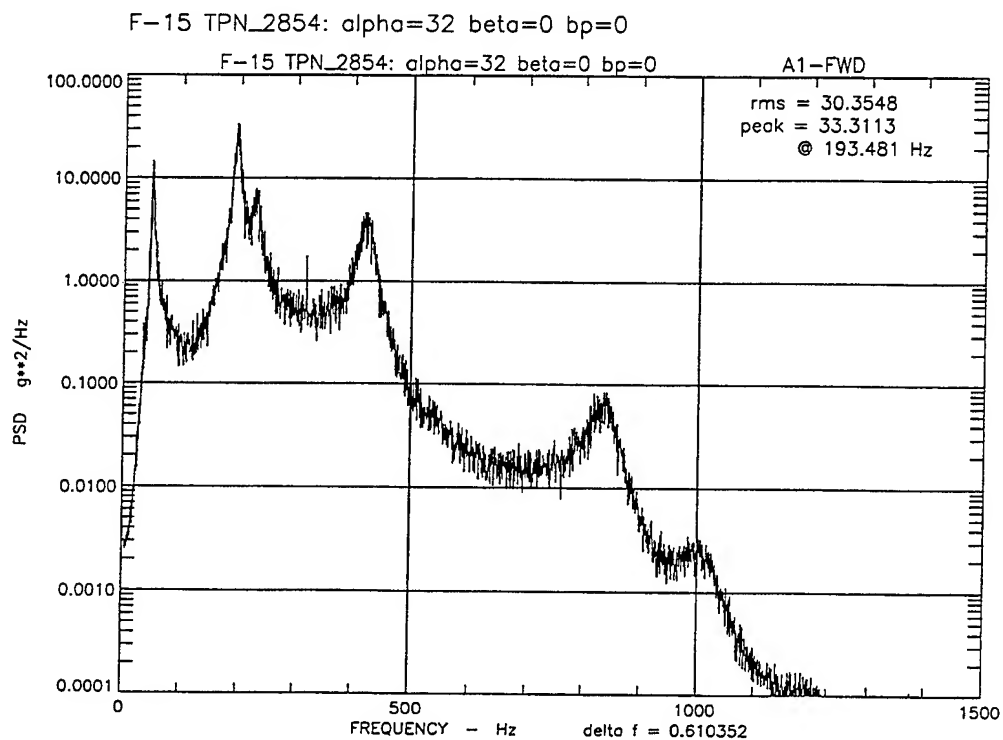
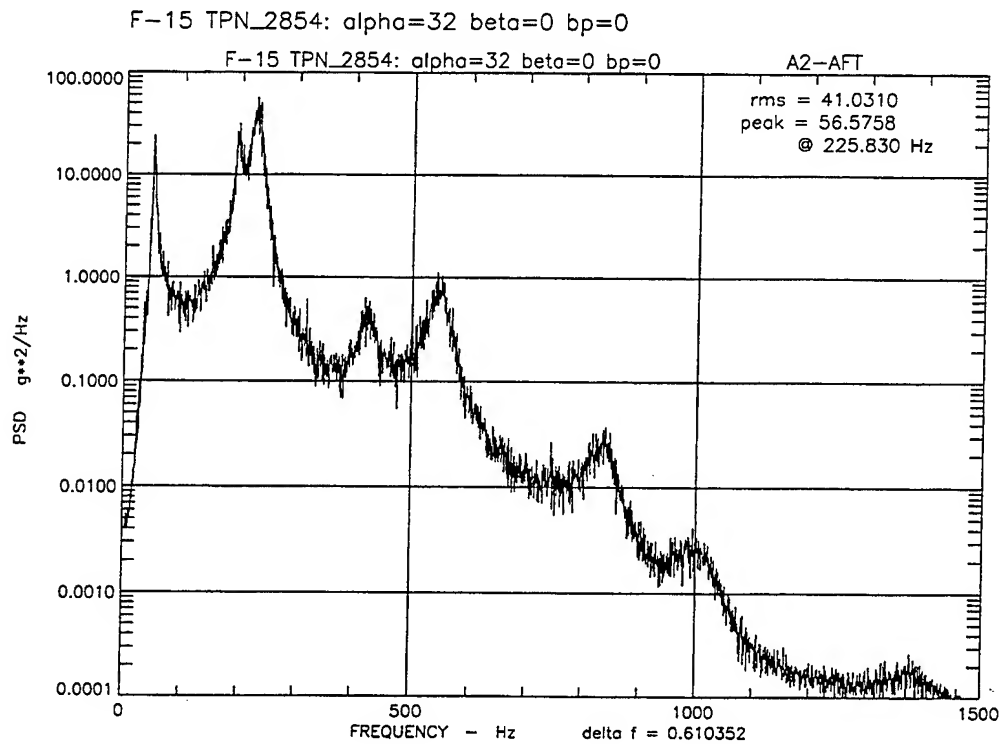




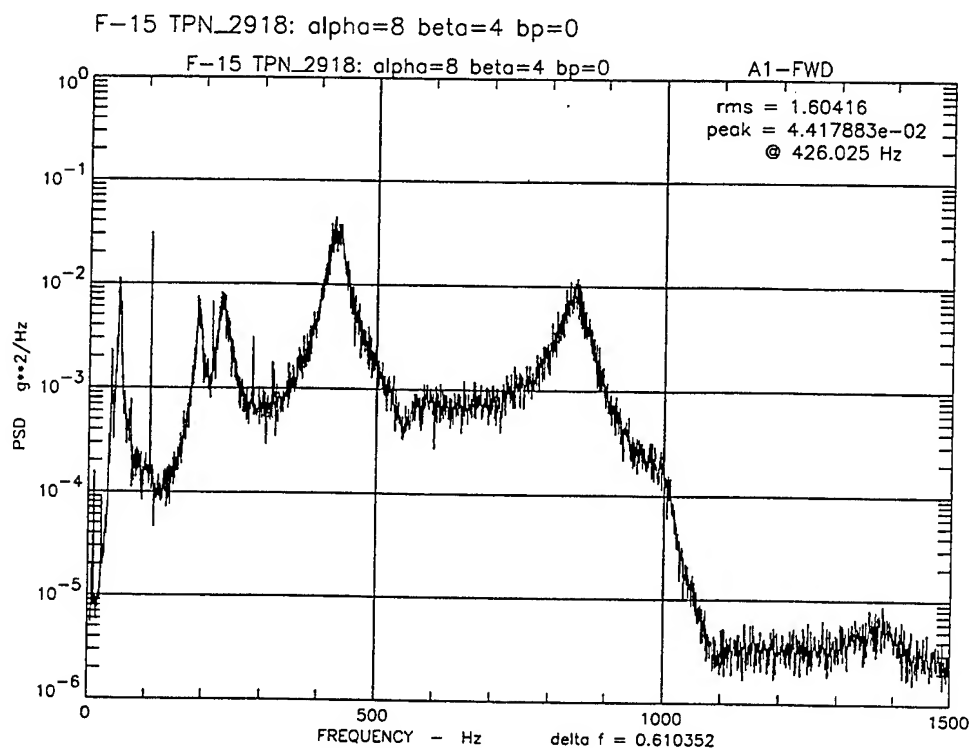
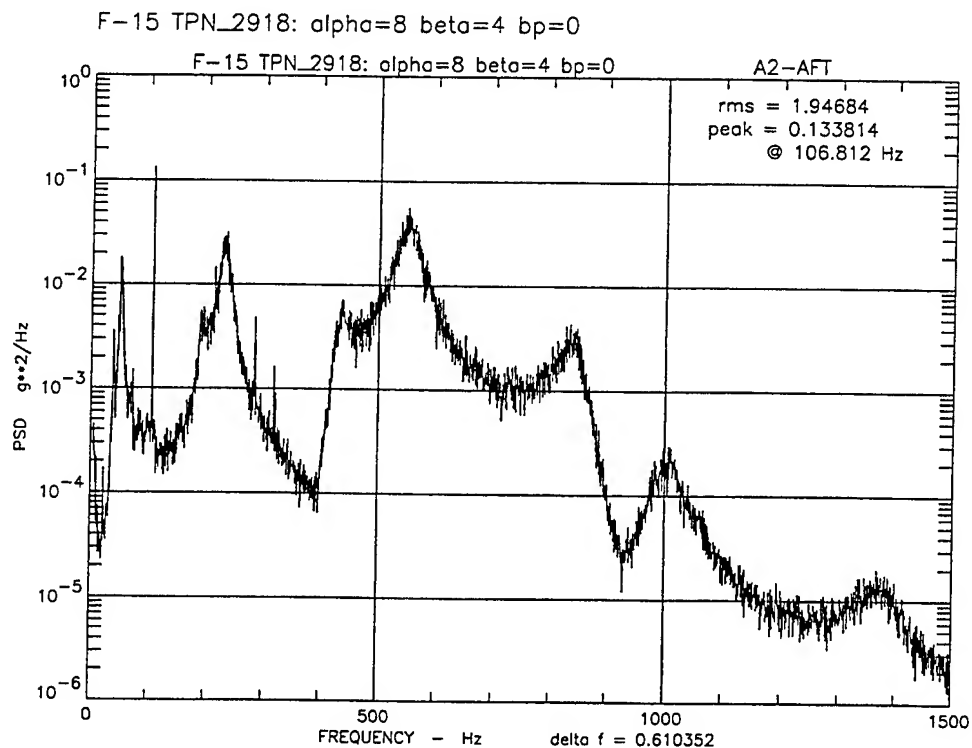




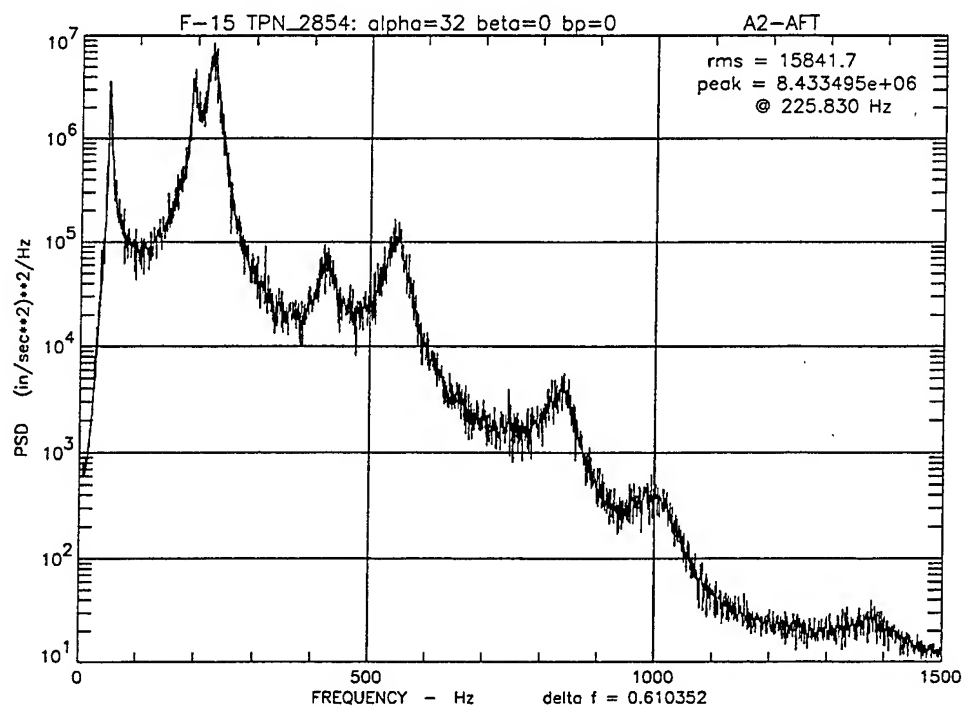




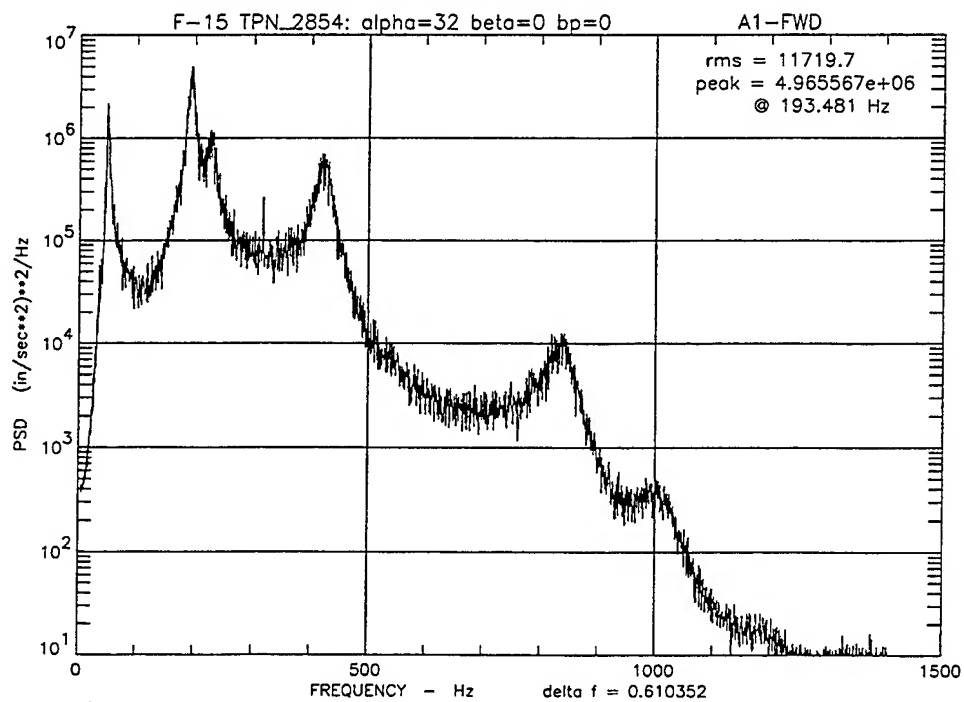


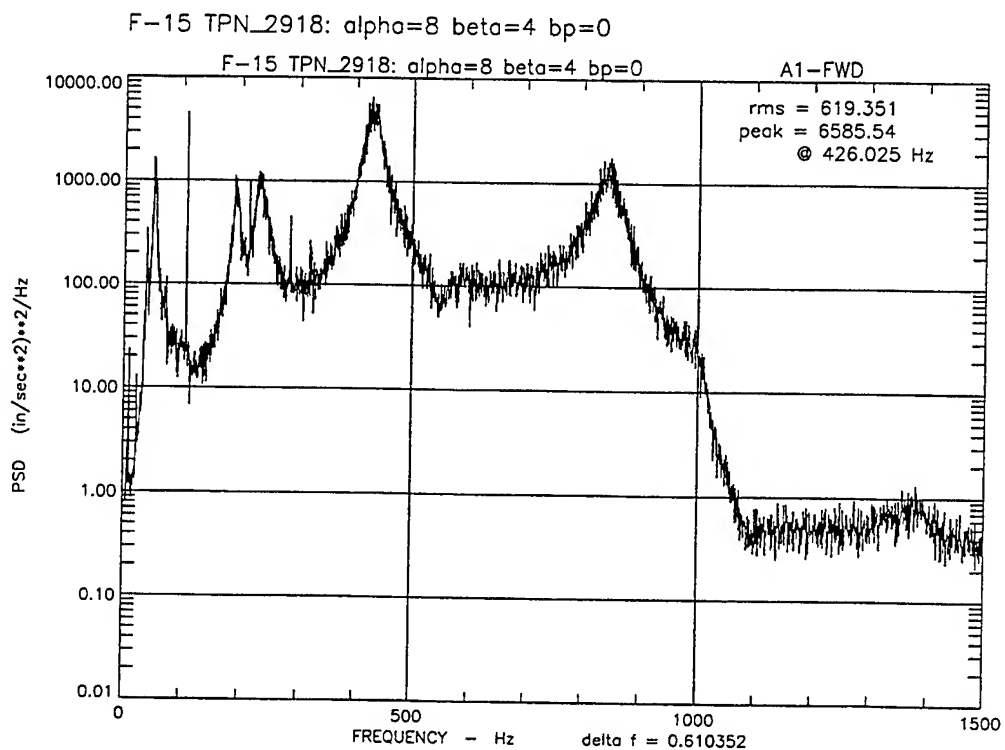
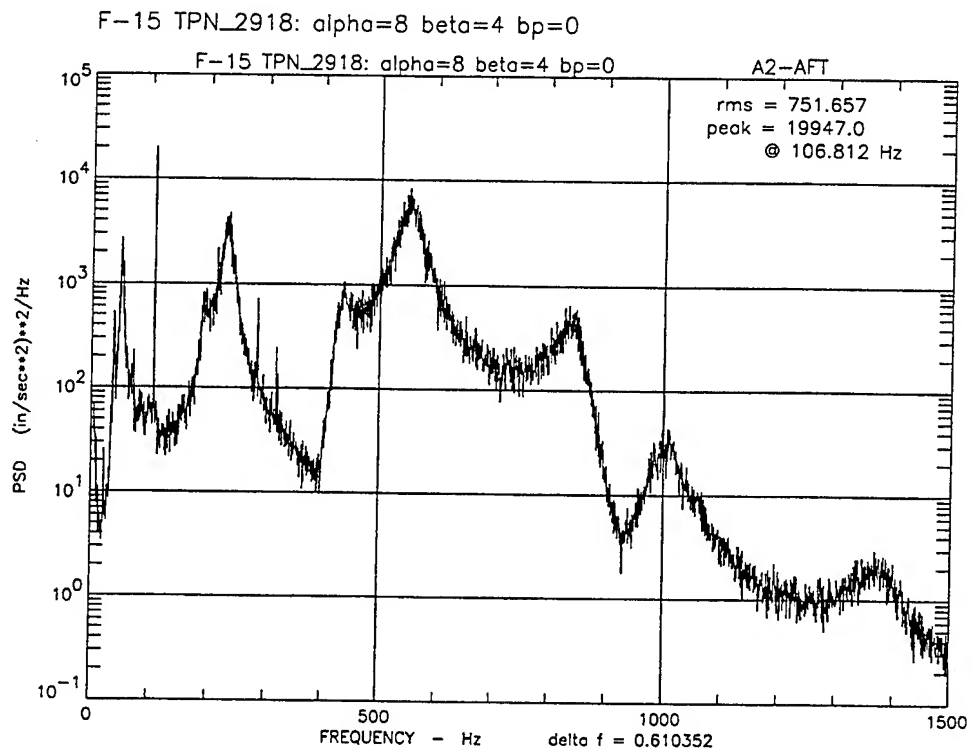


F-15 TPN\_2854: alpha=32 beta=0 bp=0

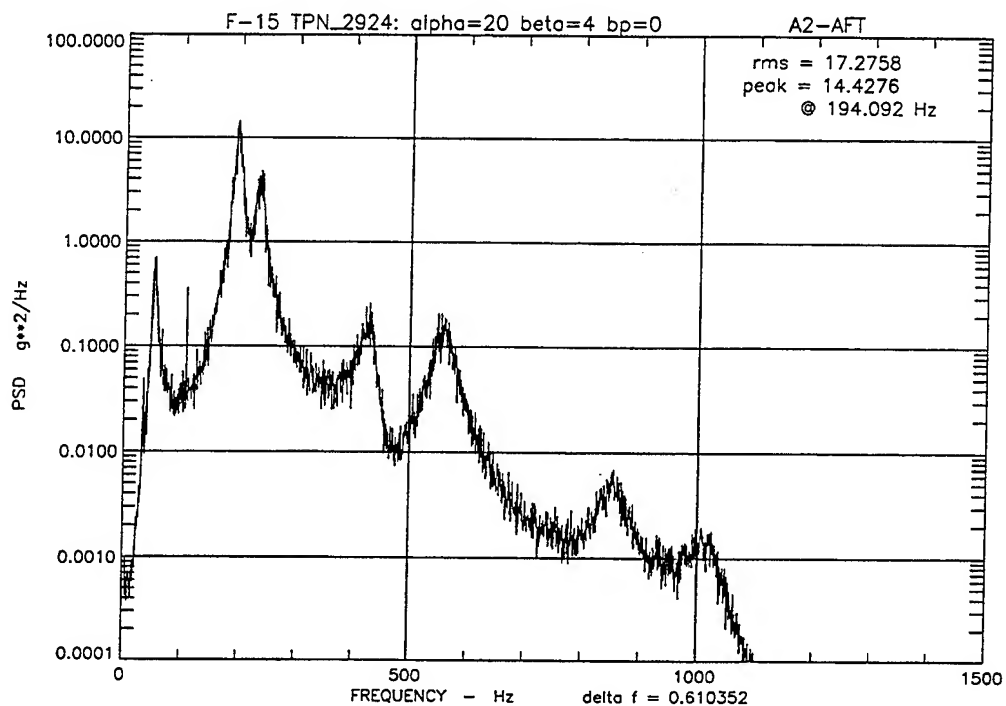


F-15 TPN\_2854: alpha=32 beta=0 bp=0

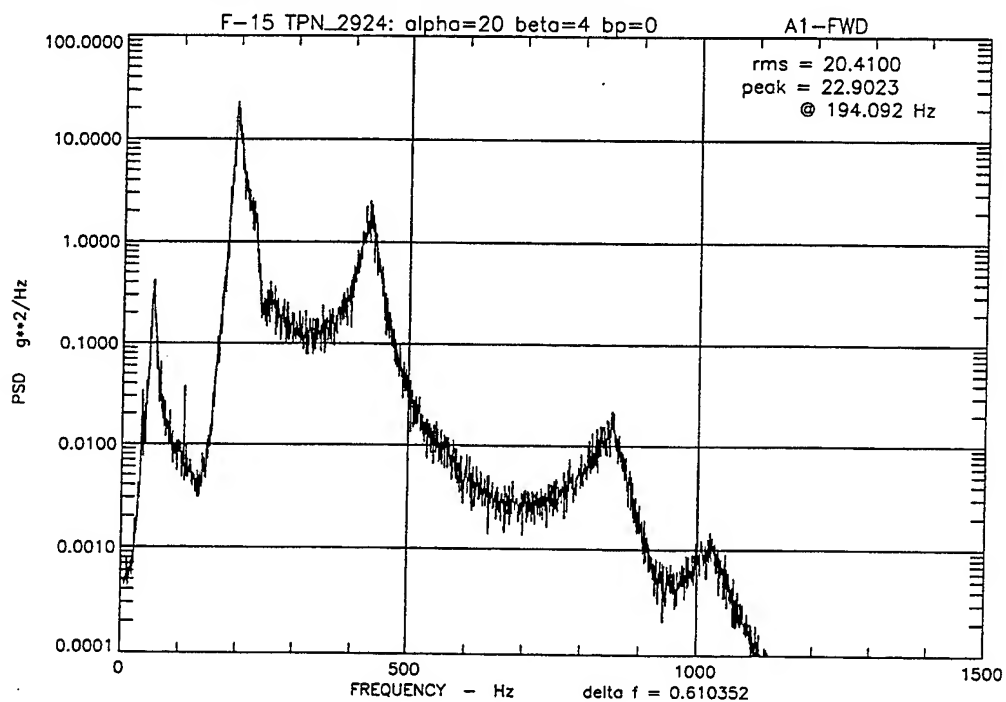


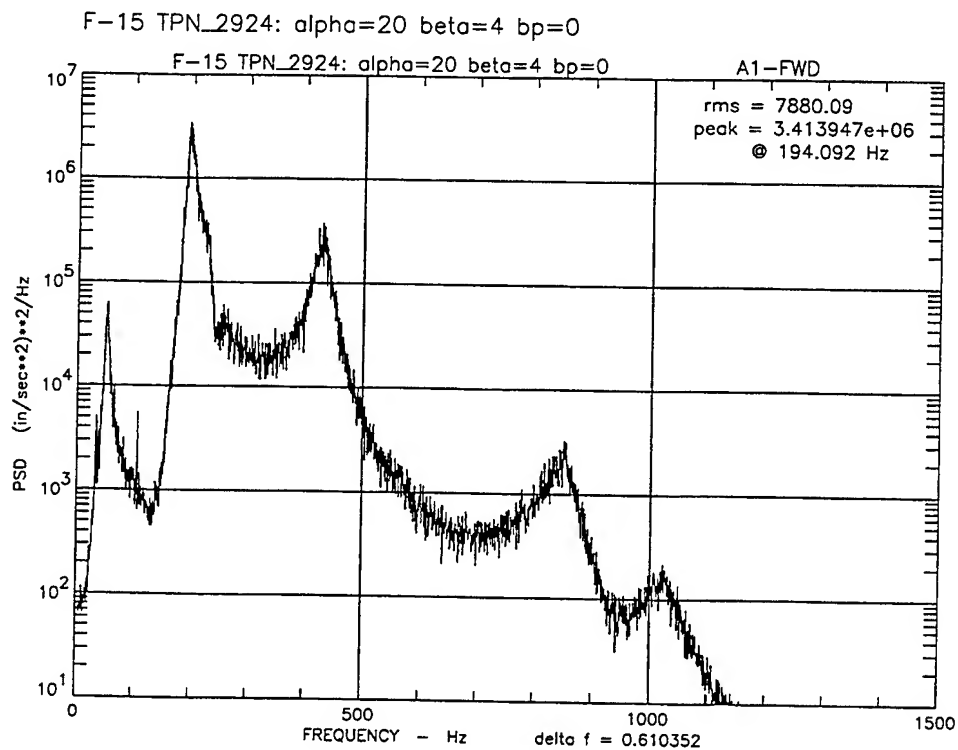
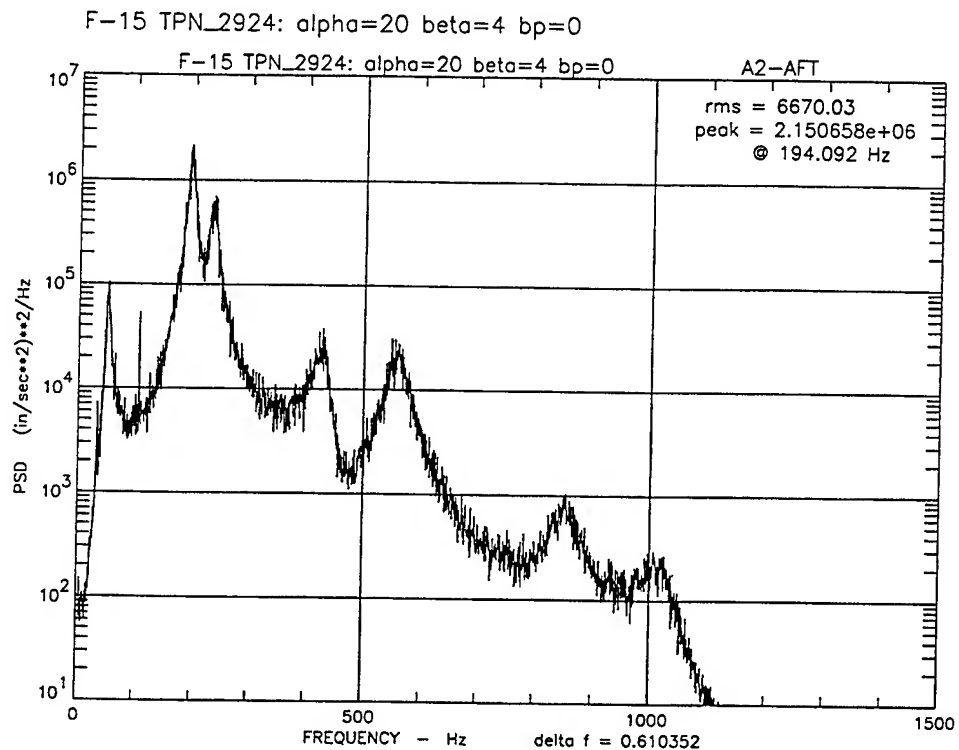


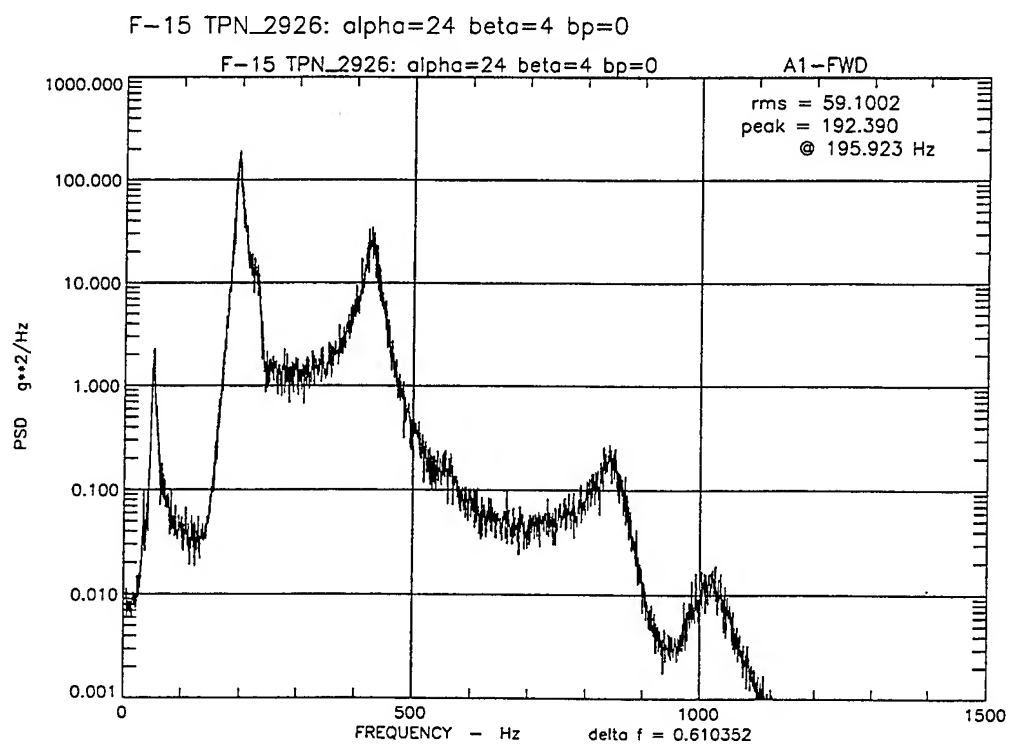
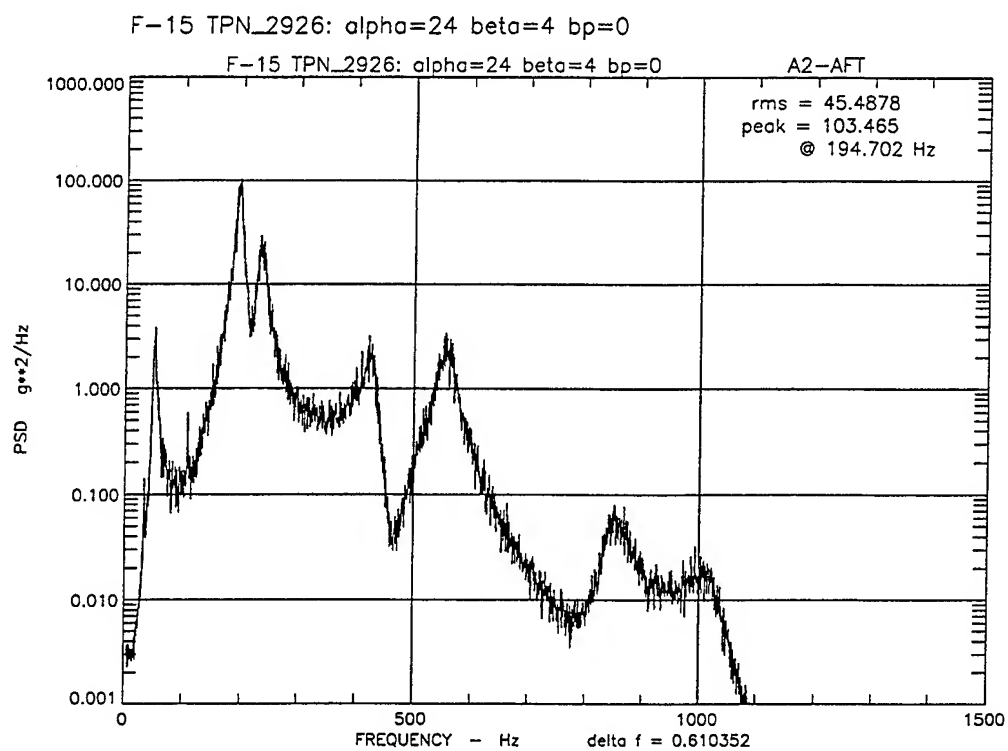
F-15 TPN\_2924: alpha=20 beta=4 bp=0



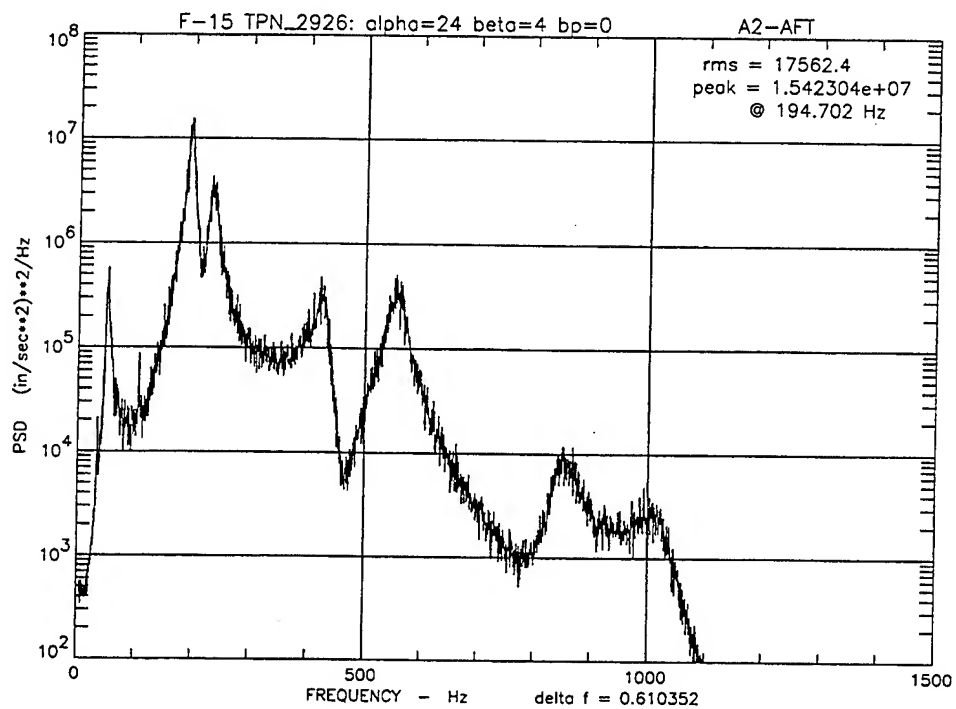
F-15 TPN\_2924: alpha=20 beta=4 bp=0



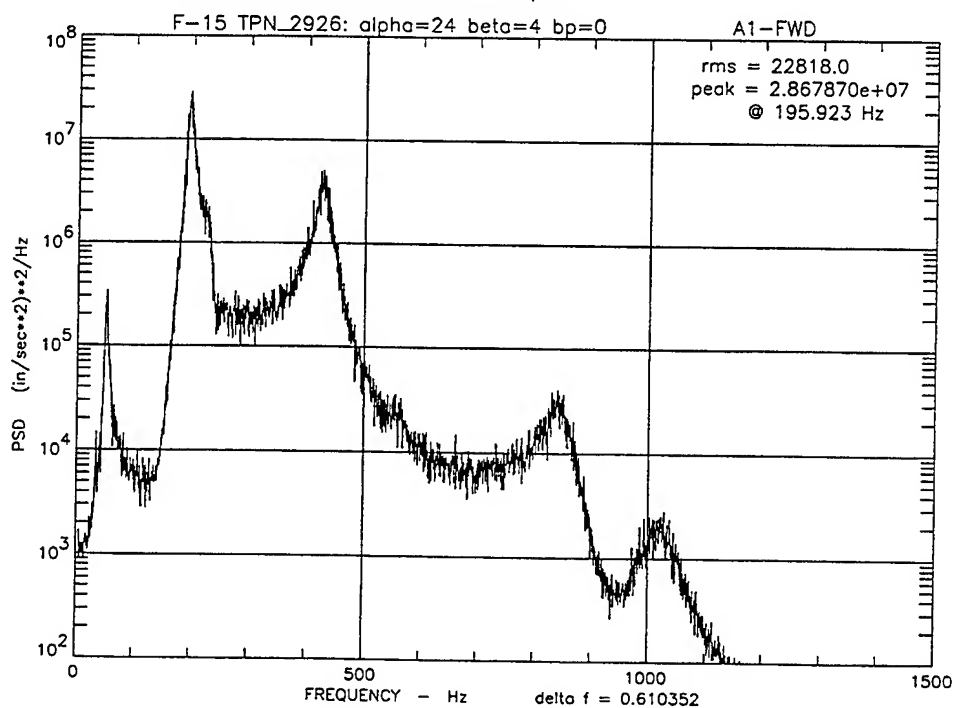




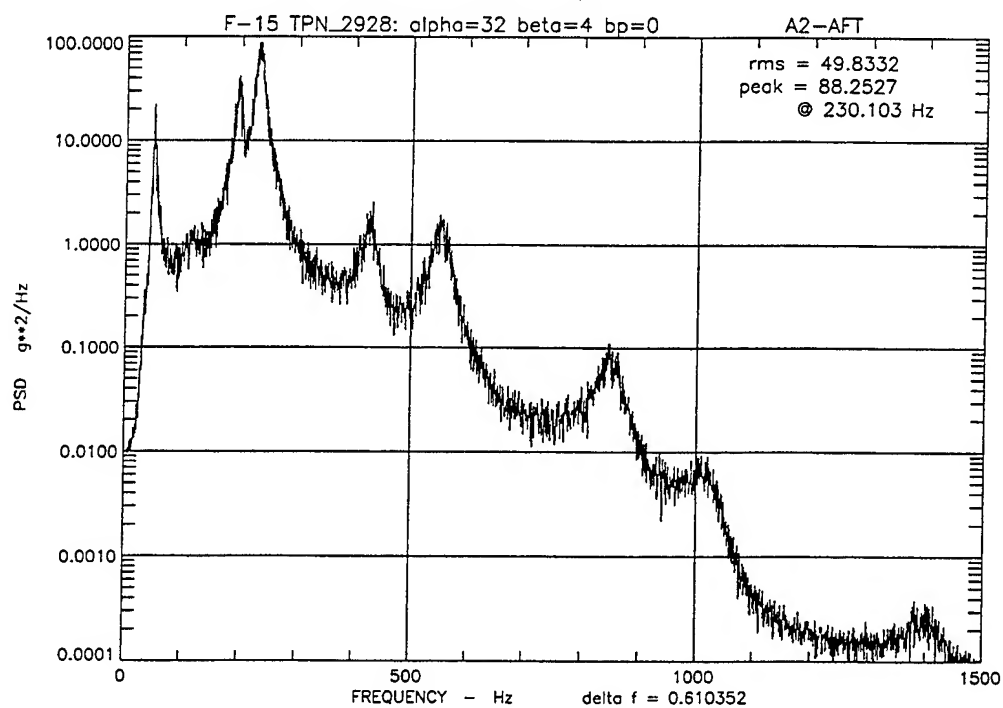
F-15 TPN\_2926: alpha=24 beta=4 bp=0



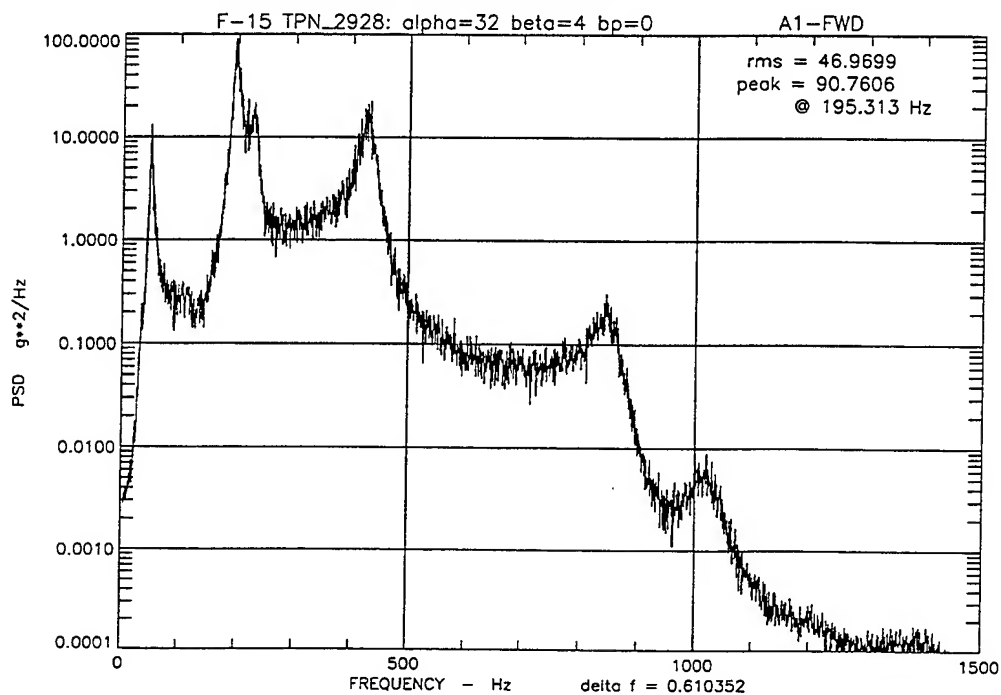
F-15 TPN\_2926: alpha=24 beta=4 bp=0



F-15 TPN\_2928: alpha=32 beta=4 bp=0

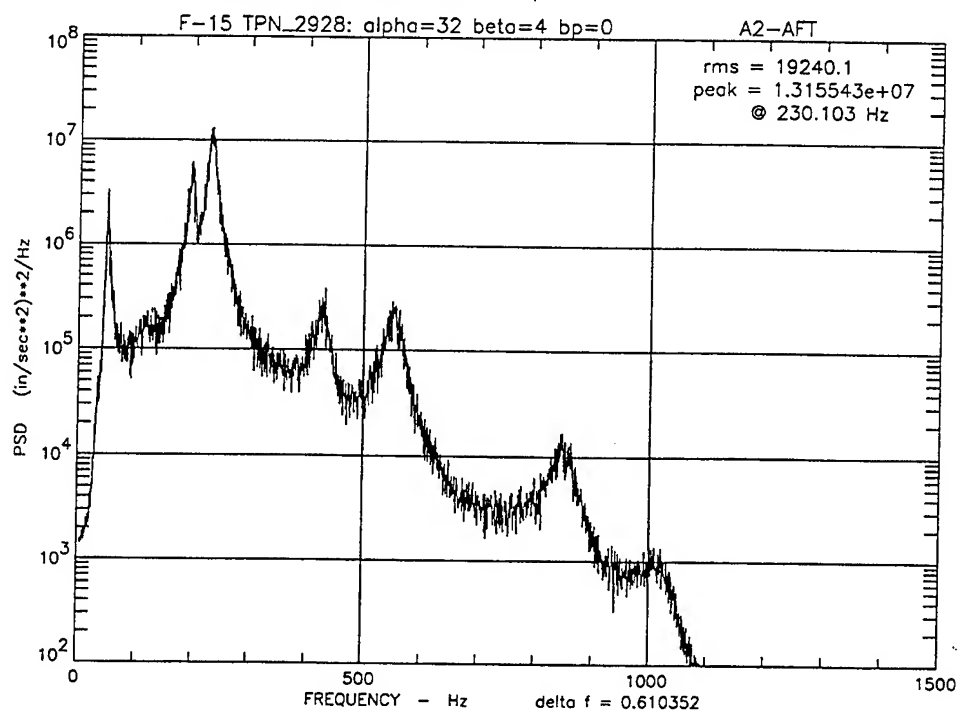


F-15 TPN\_2928: alpha=32 beta=4 bp=0

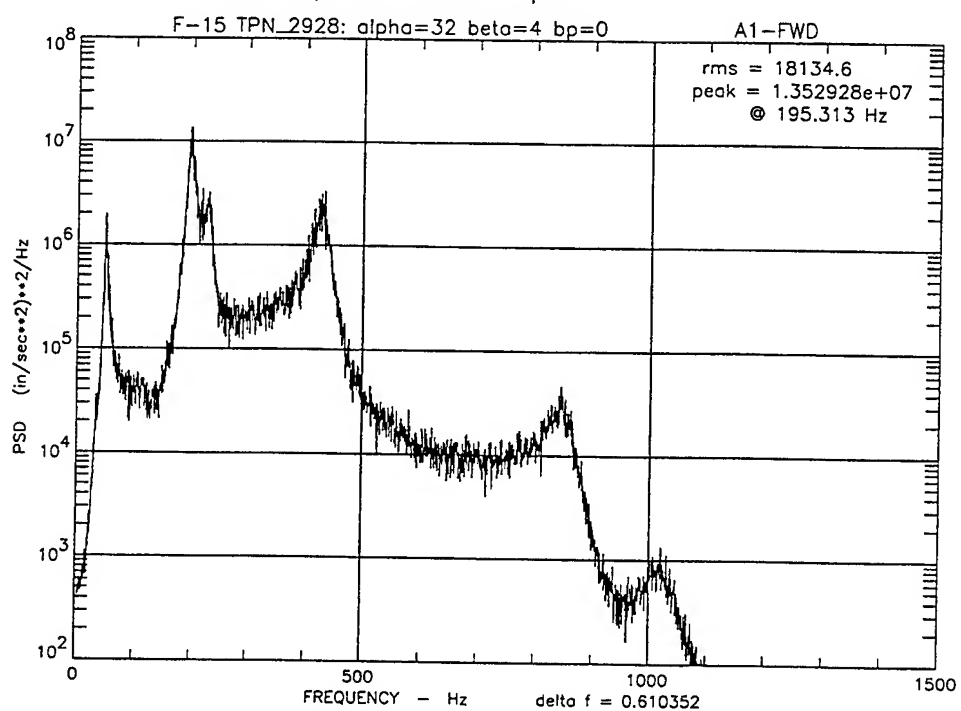




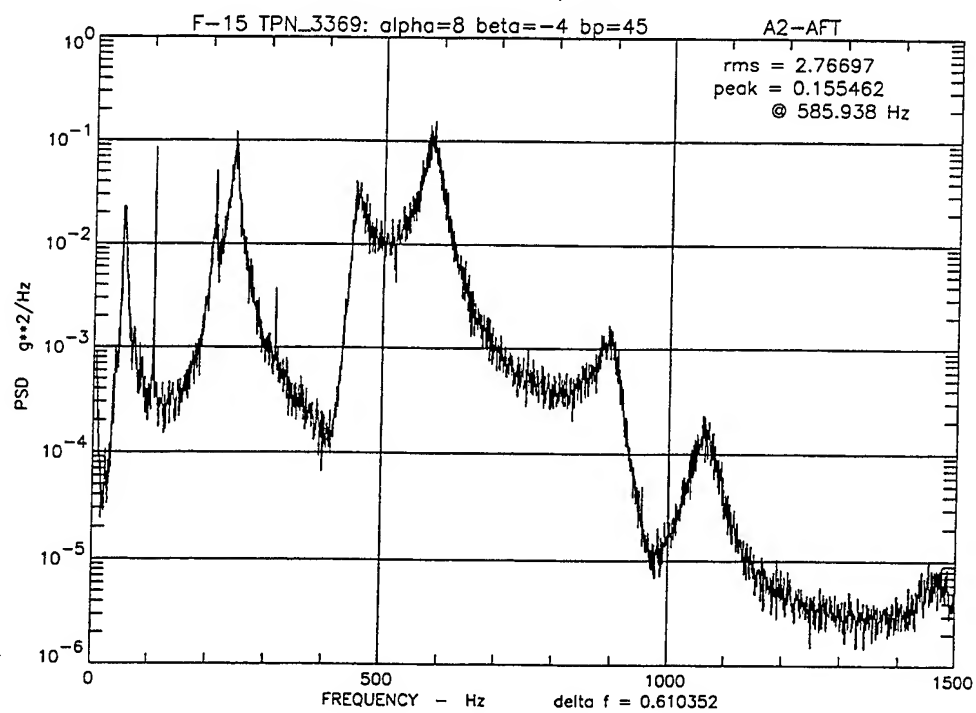
F-15 TPN\_2928: alpha=32 beta=4 bp=0



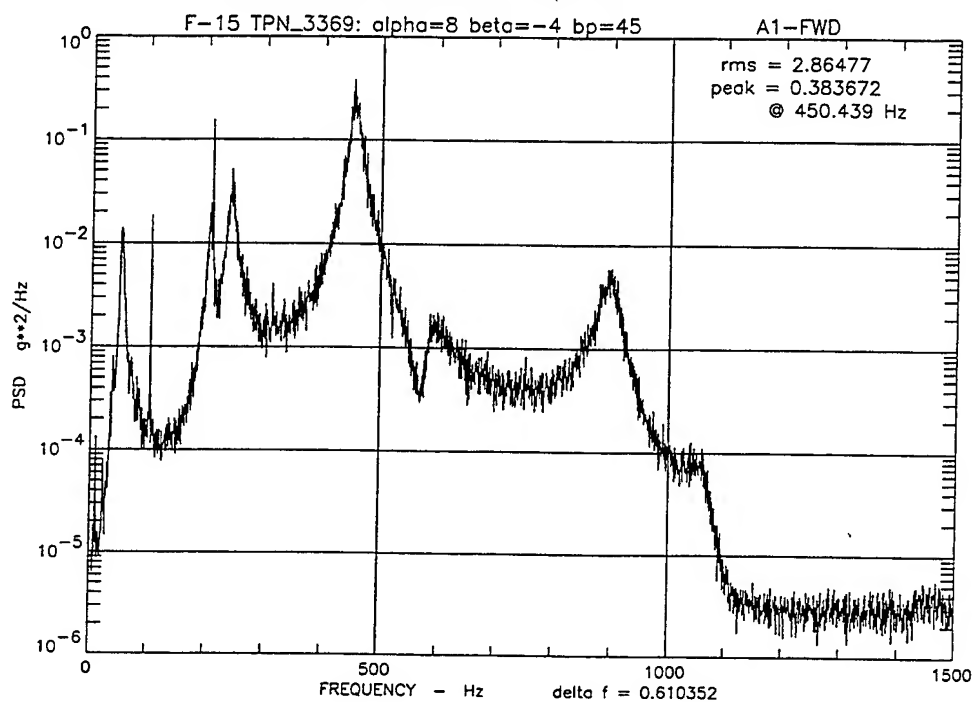
F-15 TPN\_2928: alpha=32 beta=4 bp=0



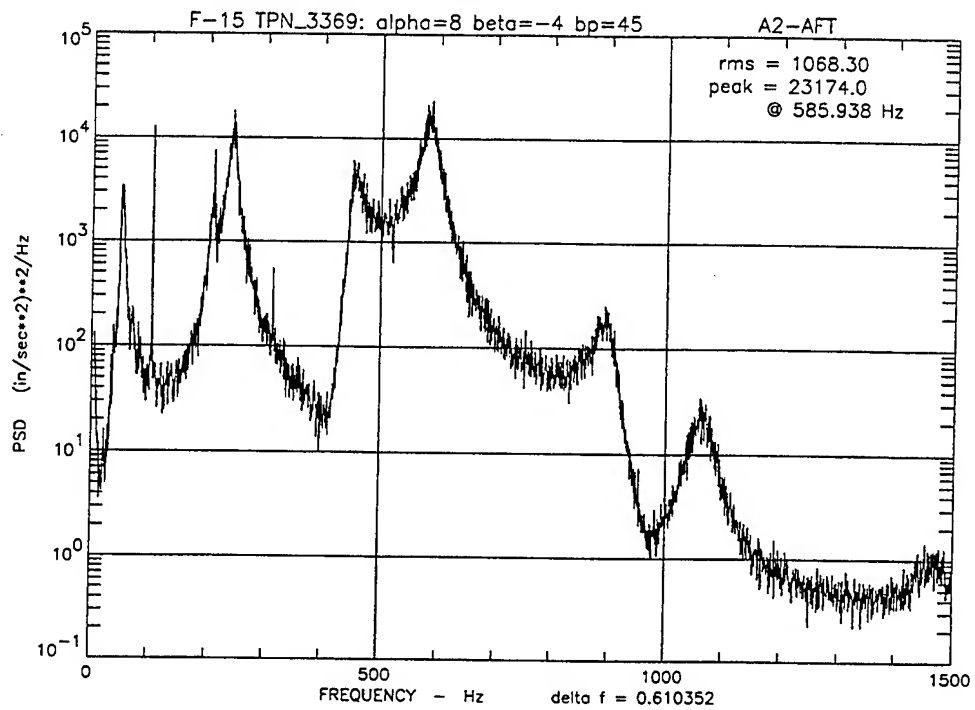
F-15 TPN\_3369: alpha=8 beta=-4 bp=45



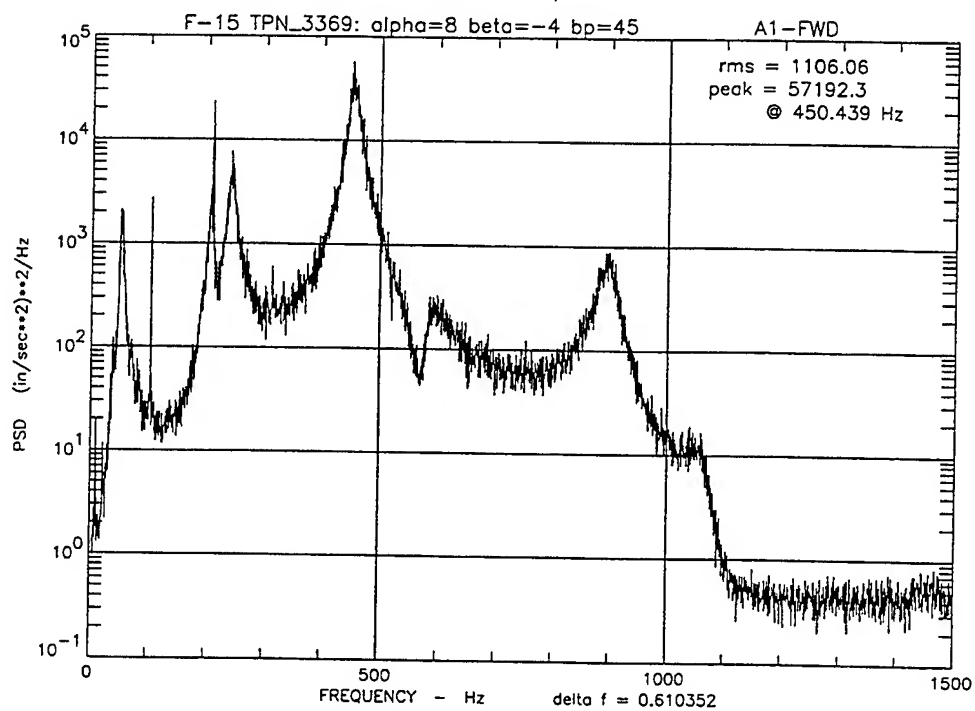
F-15 TPN\_3369: alpha=8 beta=-4 bp=45



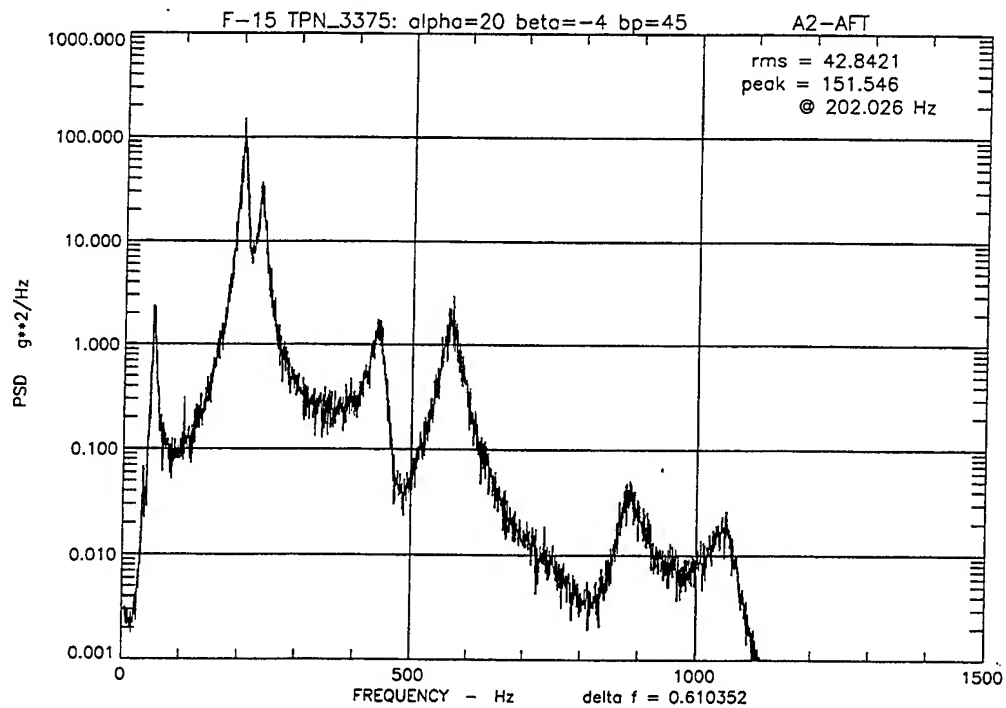
F-15 TPN\_3369: alpha=8 beta=-4 bp=45



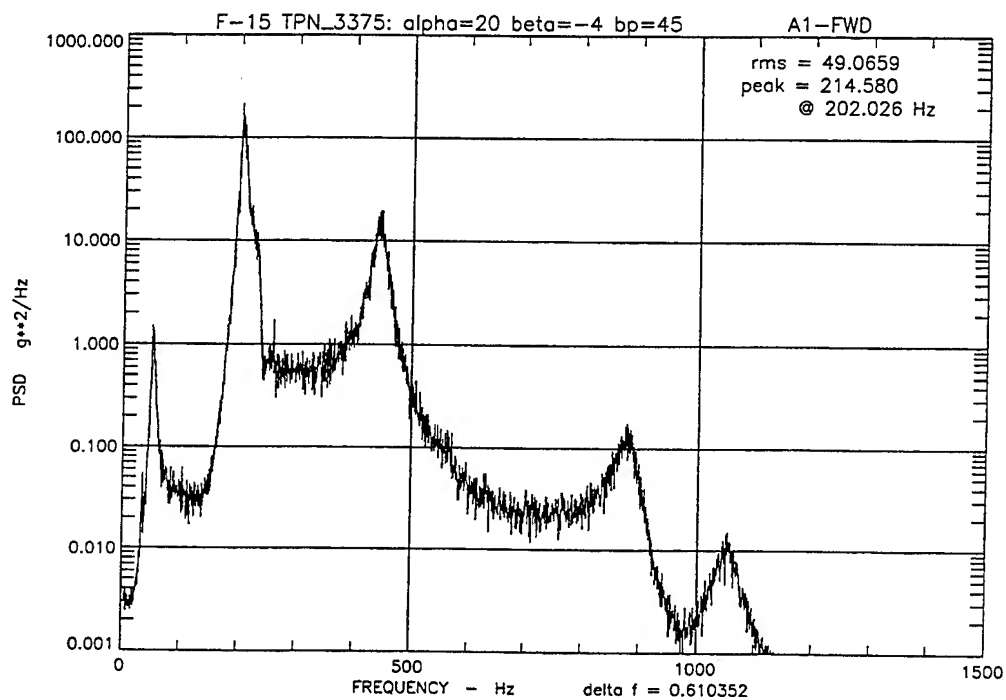
F-15 TPN\_3369: alpha=8 beta=-4 bp=45



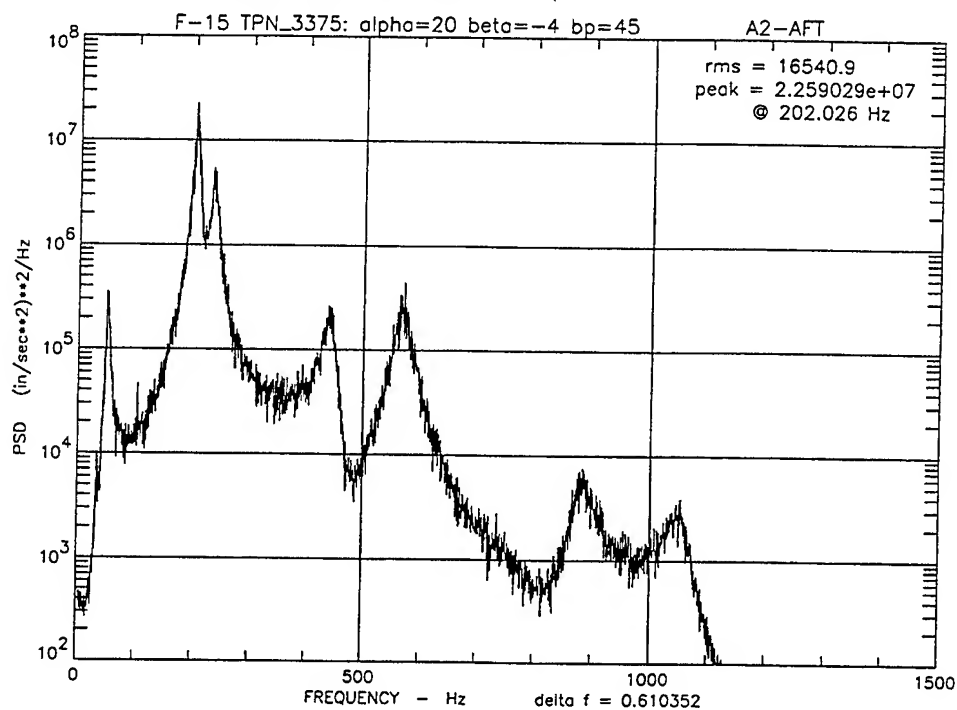
F-15 TPN\_3375: alpha=20 beta=-4 bp=45



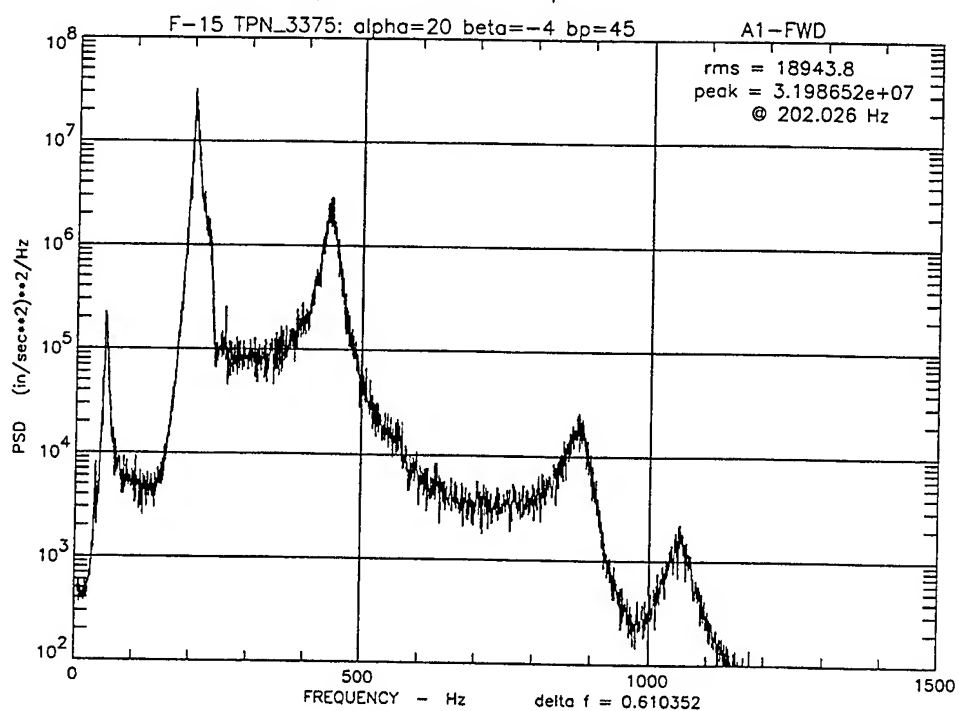
F-15 TPN\_3375: alpha=20 beta=-4 bp=45



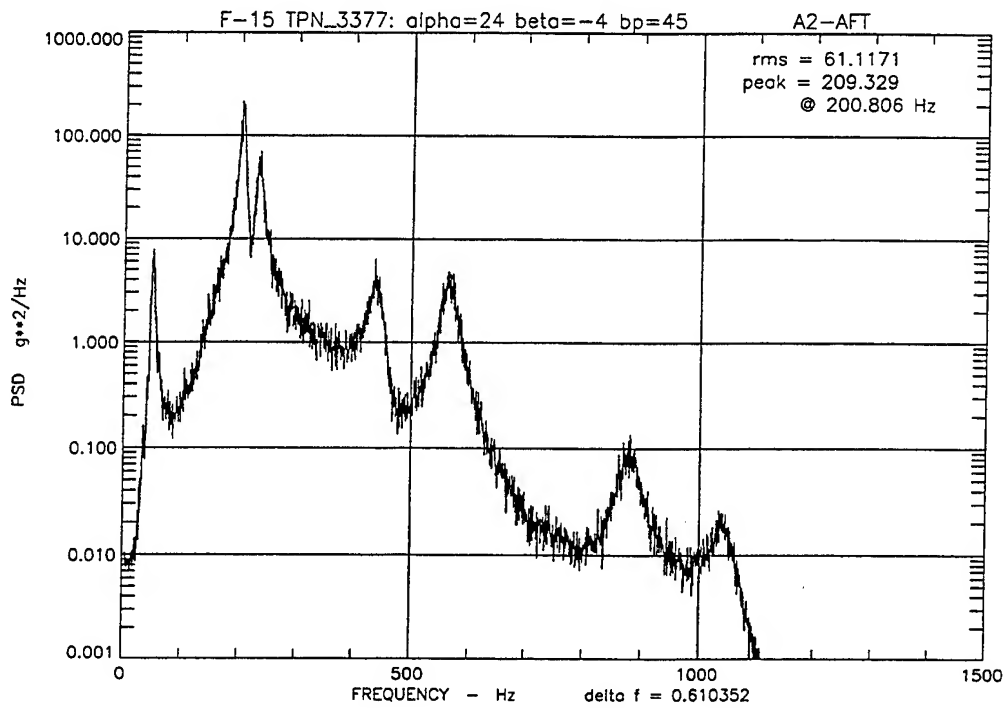
F-15 TPN\_3375: alpha=20 beta=-4 bp=45



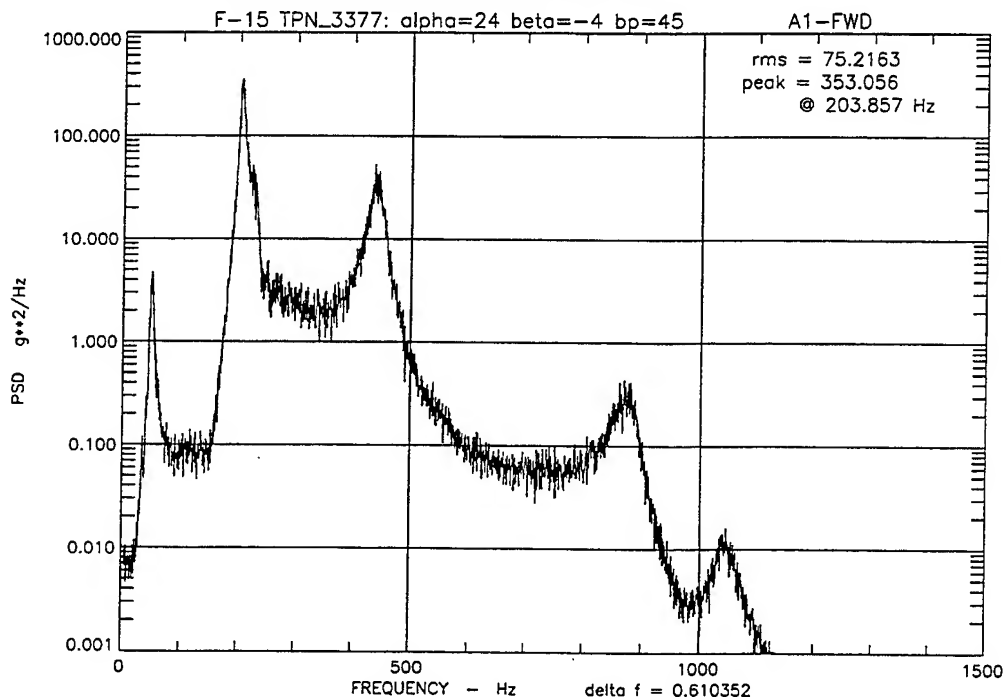
F-15 TPN\_3375: alpha=20 beta=-4 bp=45



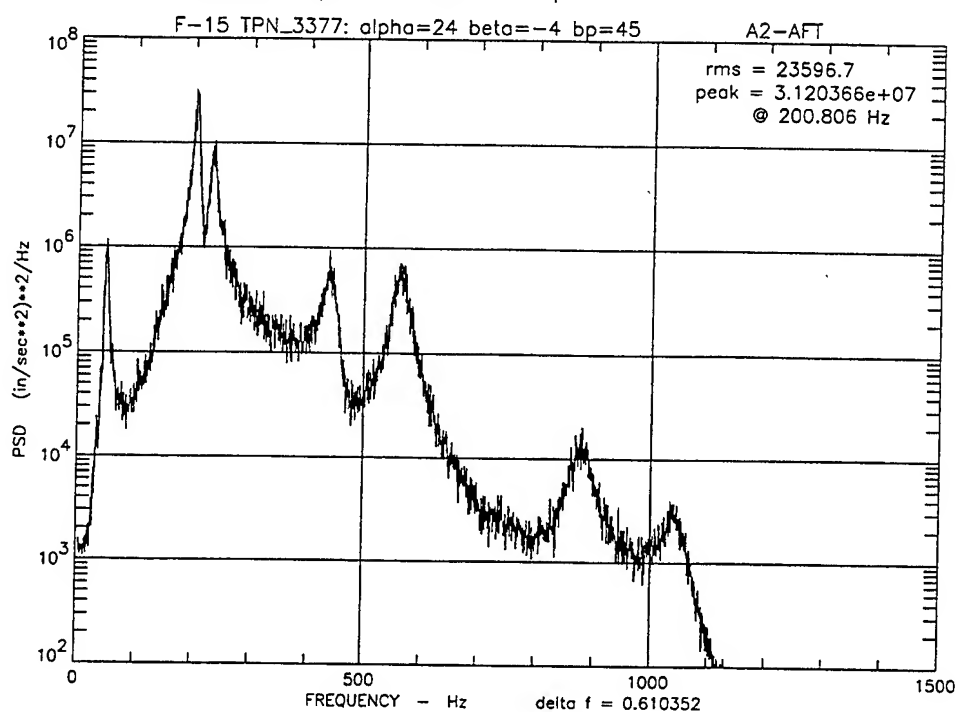
F-15 TPN\_3377: alpha=24 beta=-4 bp=45



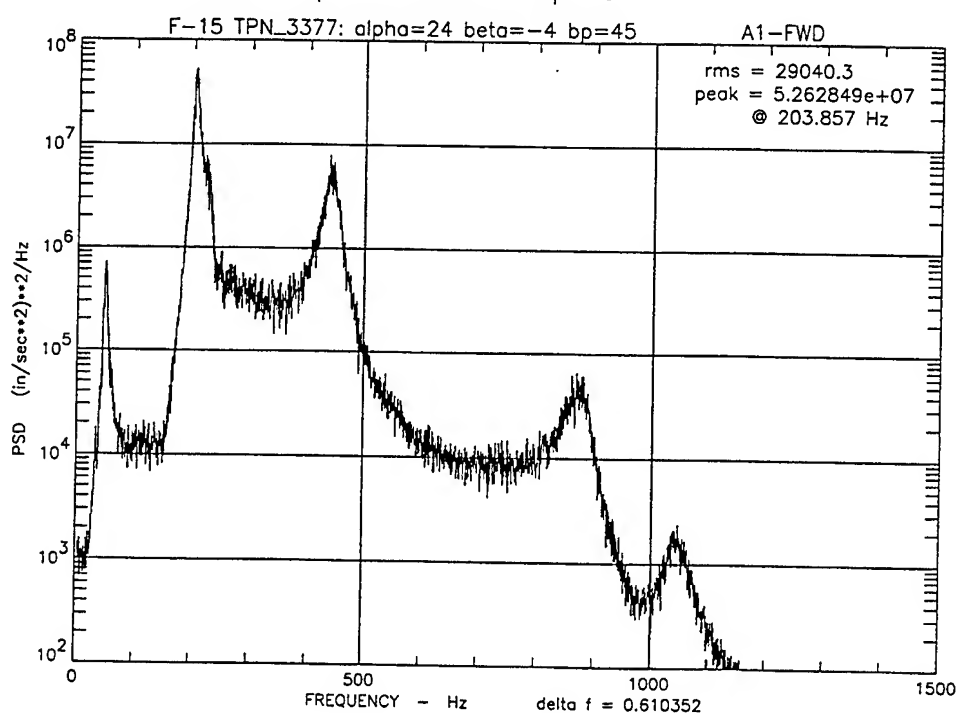
F-15 TPN\_3377: alpha=24 beta=-4 bp=45

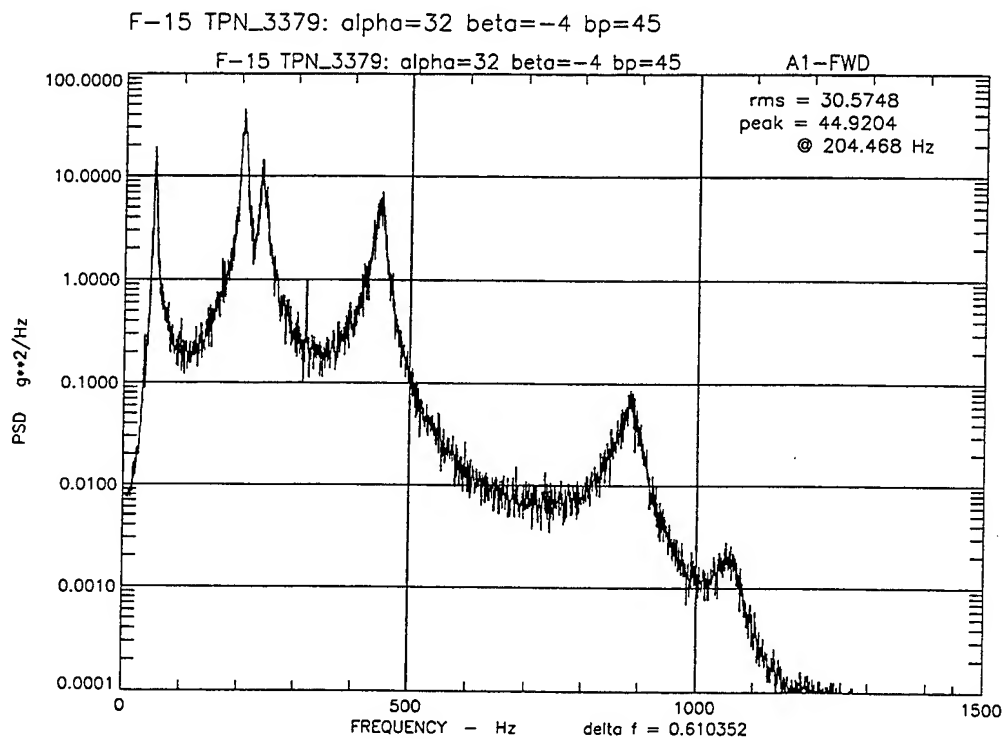
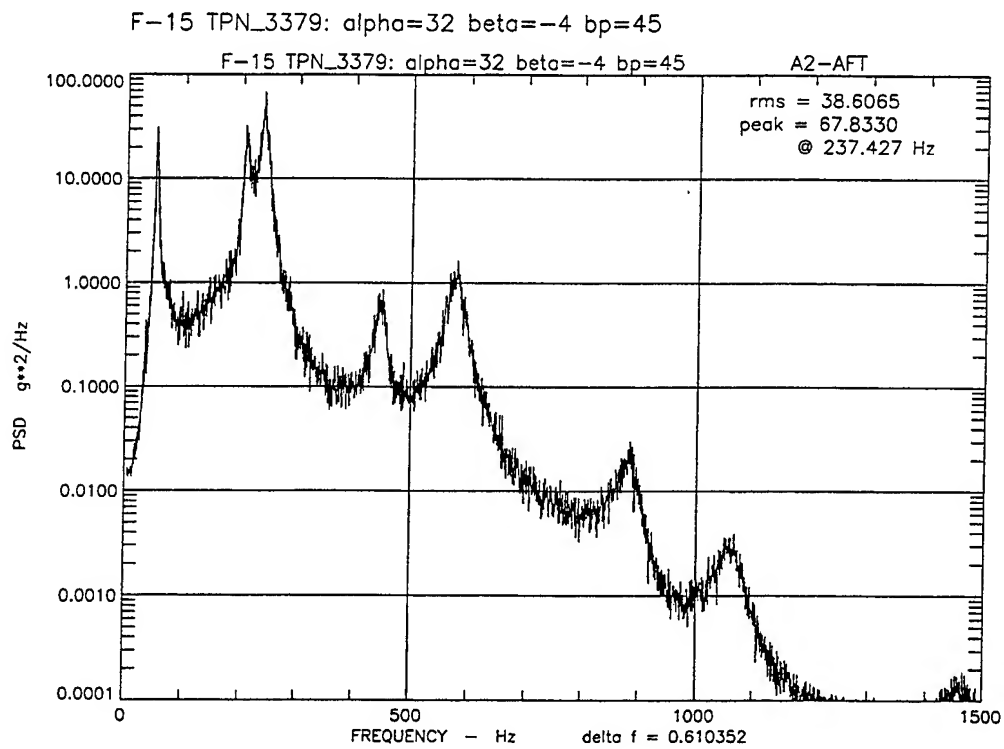


F-15 TPN\_3377: alpha=24 beta=-4 bp=45

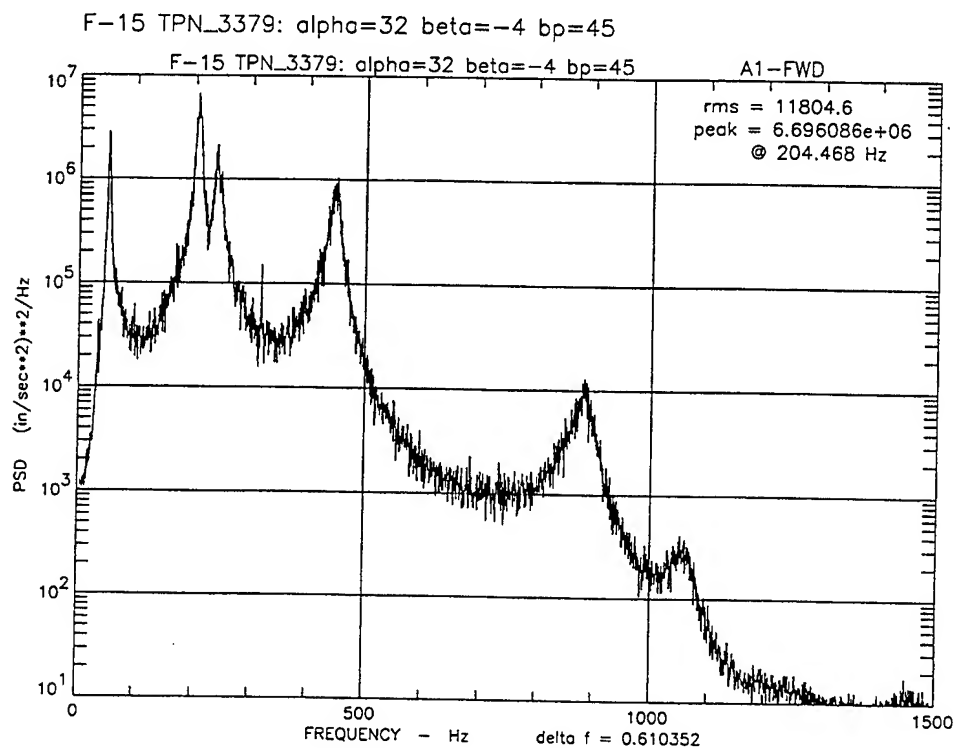
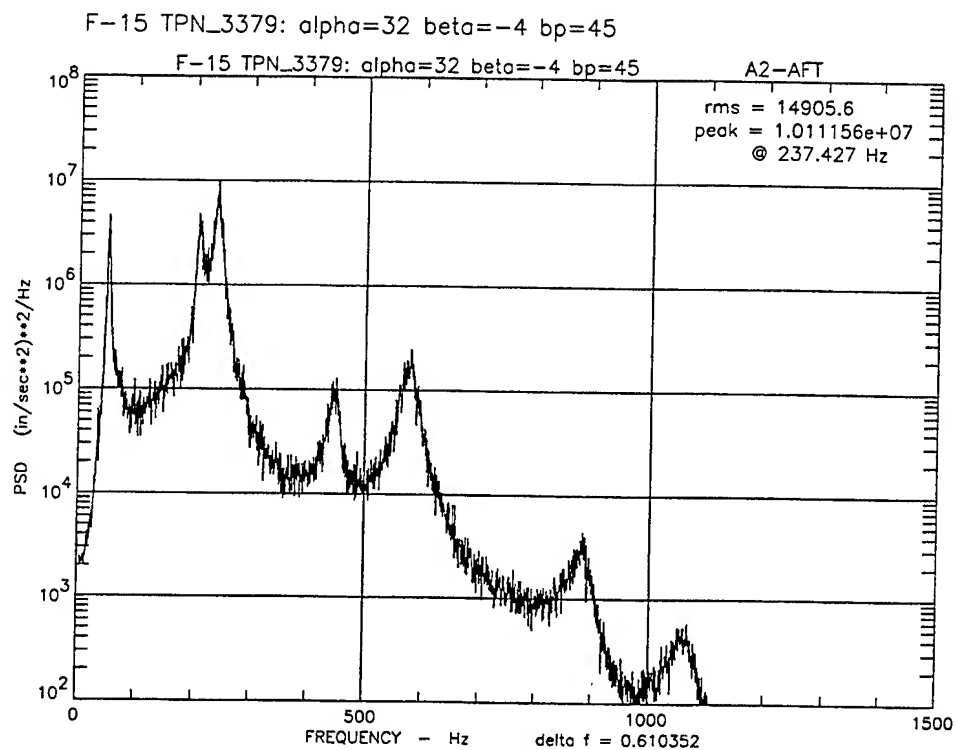


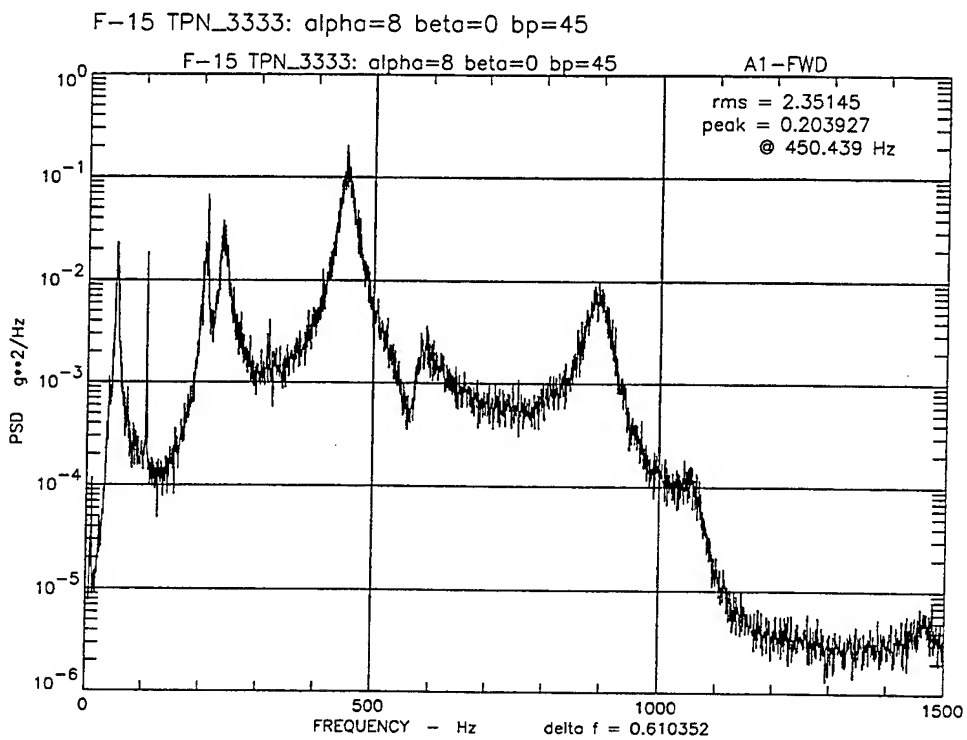
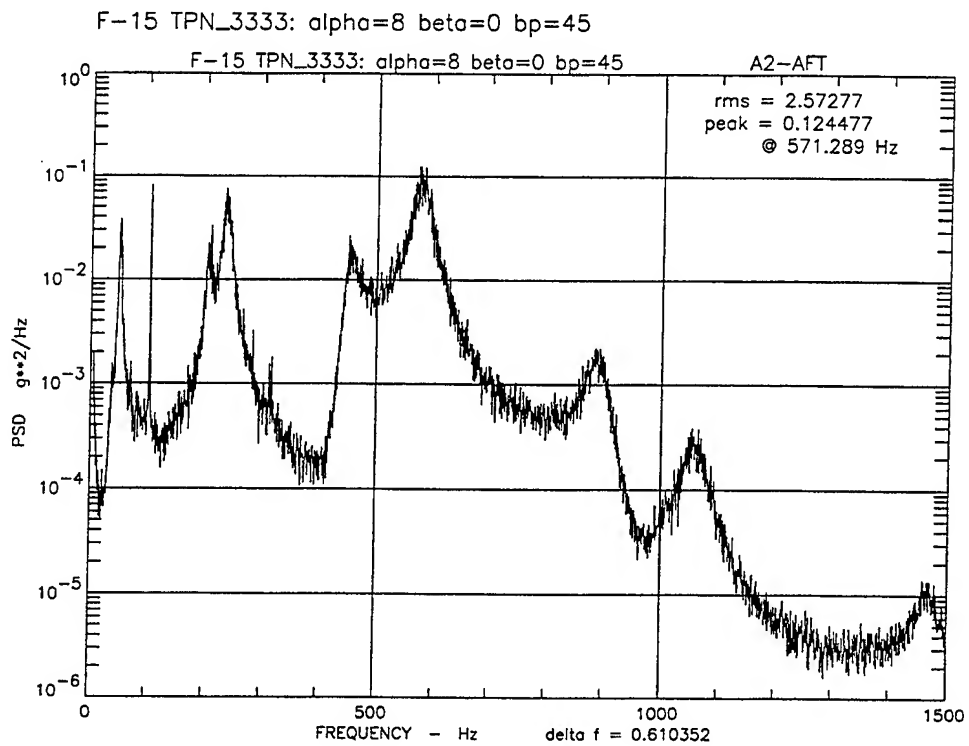
F-15 TPN\_3377: alpha=24 beta=-4 bp=45

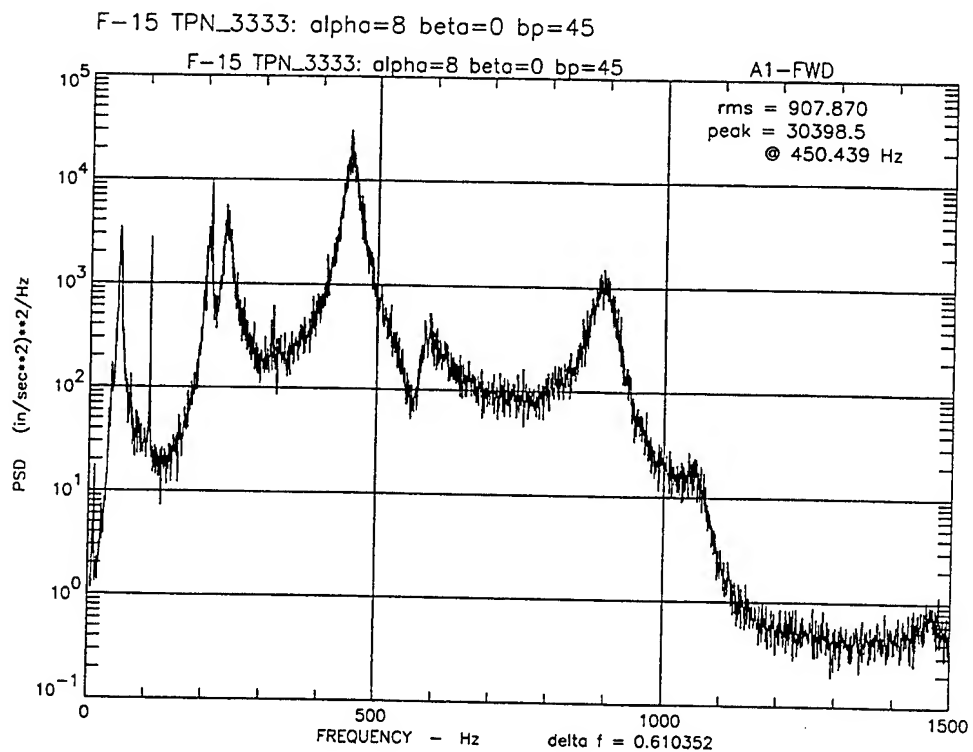
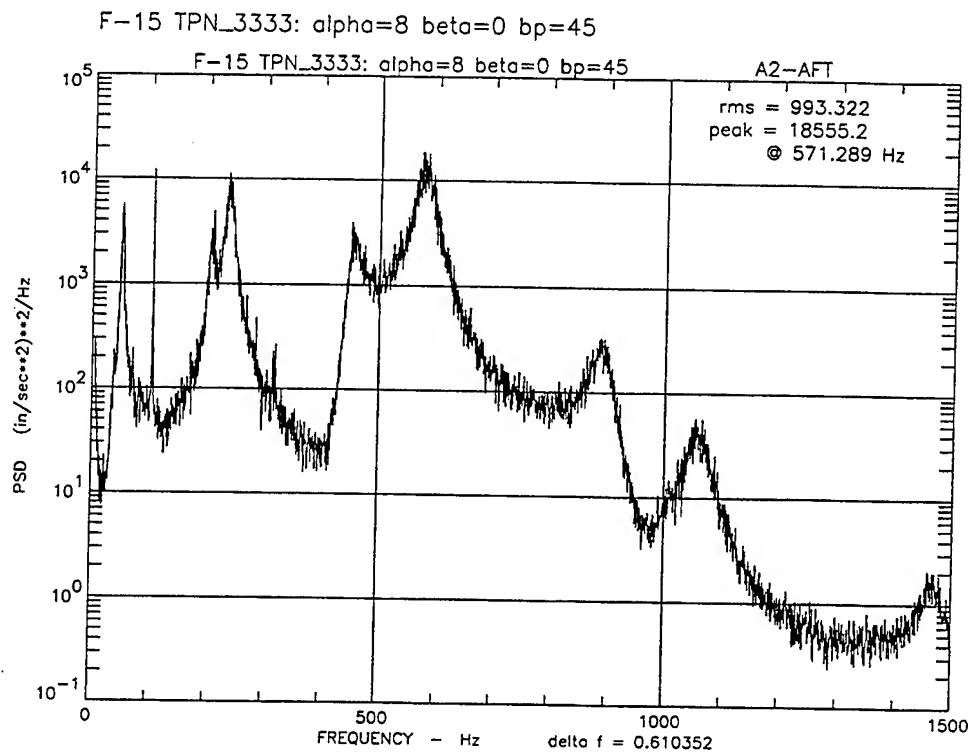




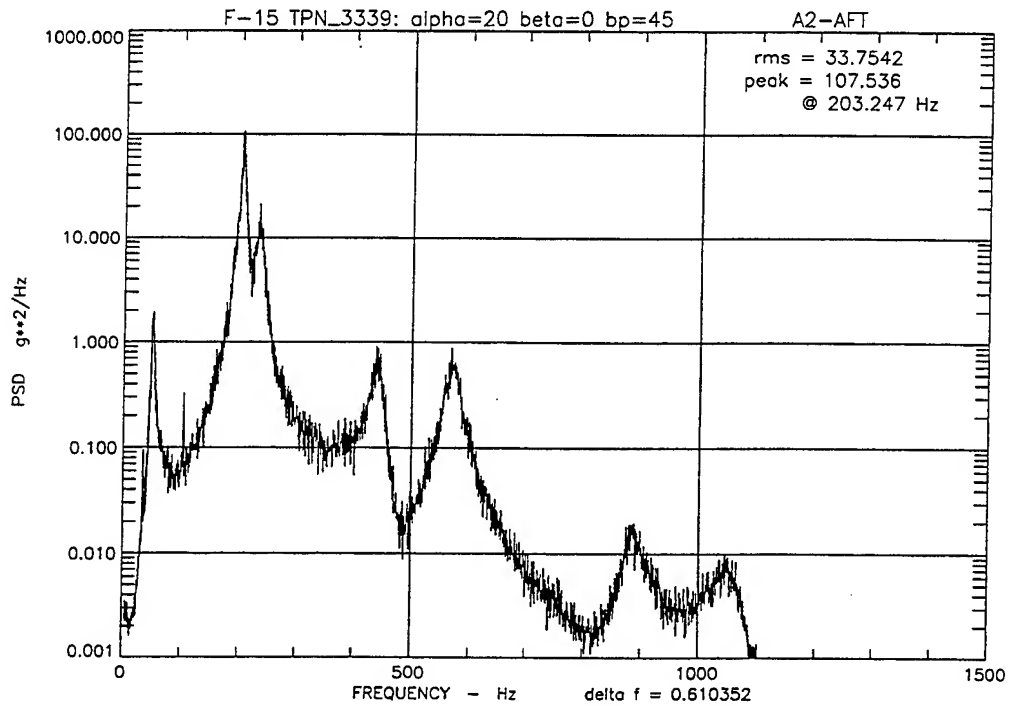




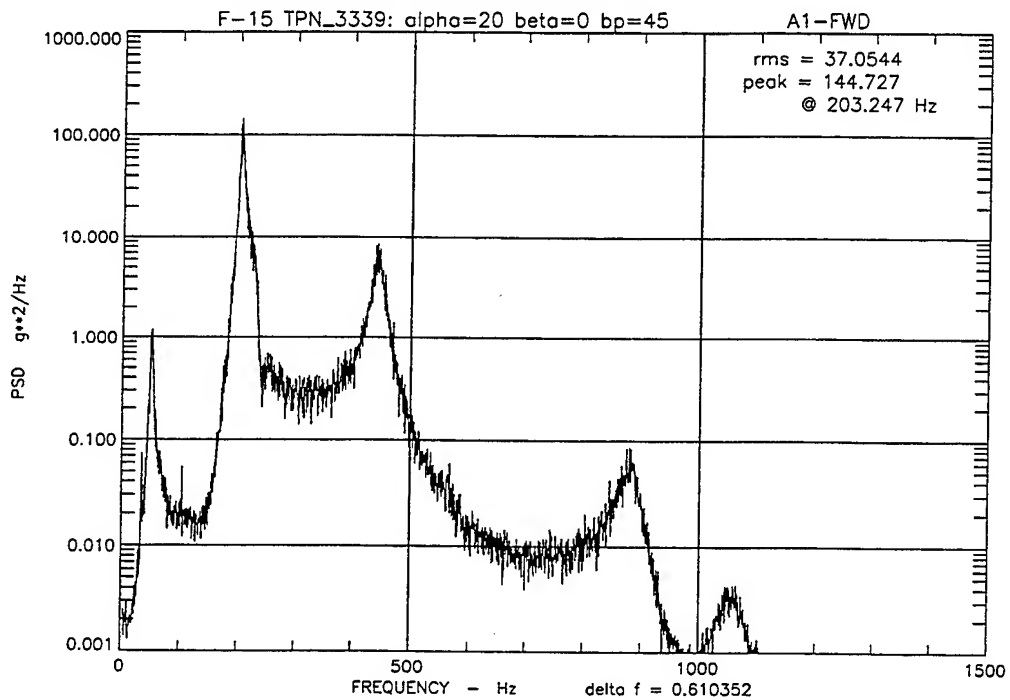




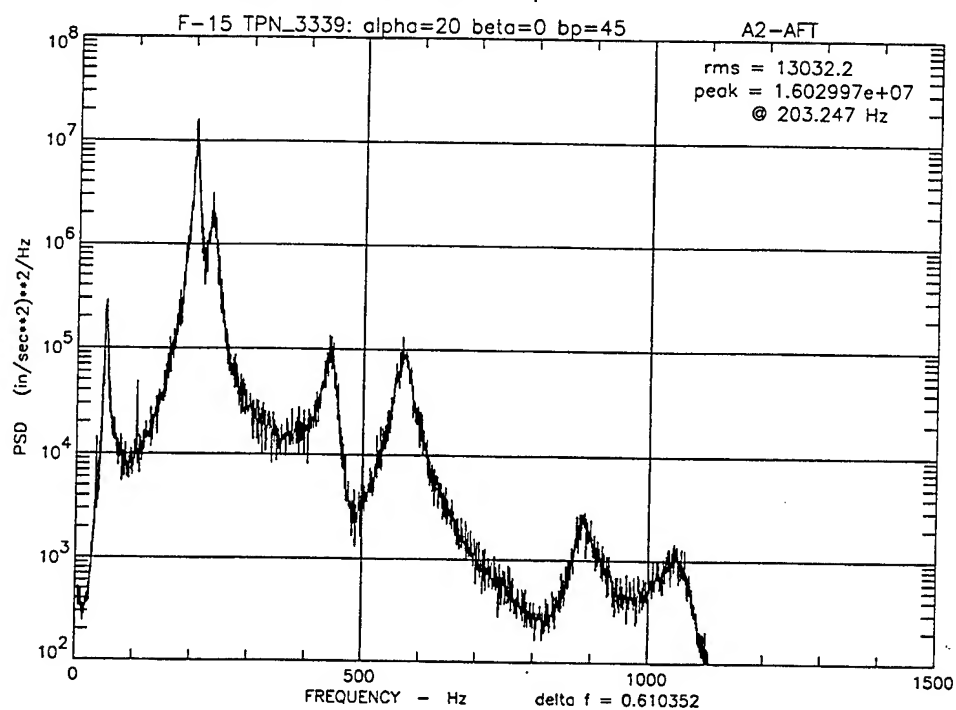
F-15 TPN\_3339: alpha=20 beta=0 bp=45



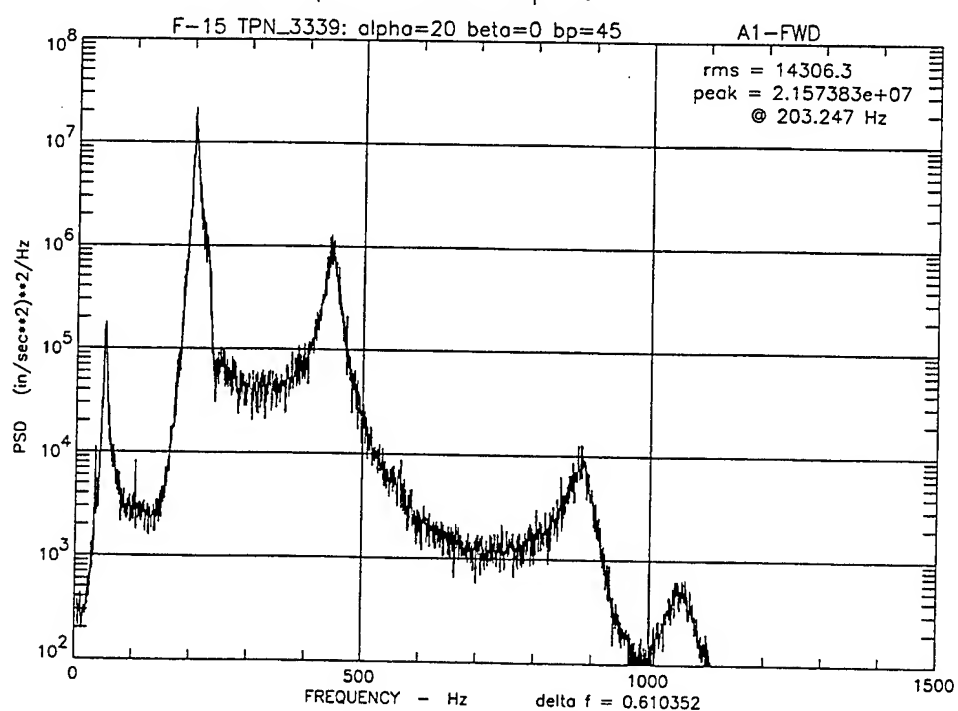
F-15 TPN\_3339: alpha=20 beta=0 bp=45



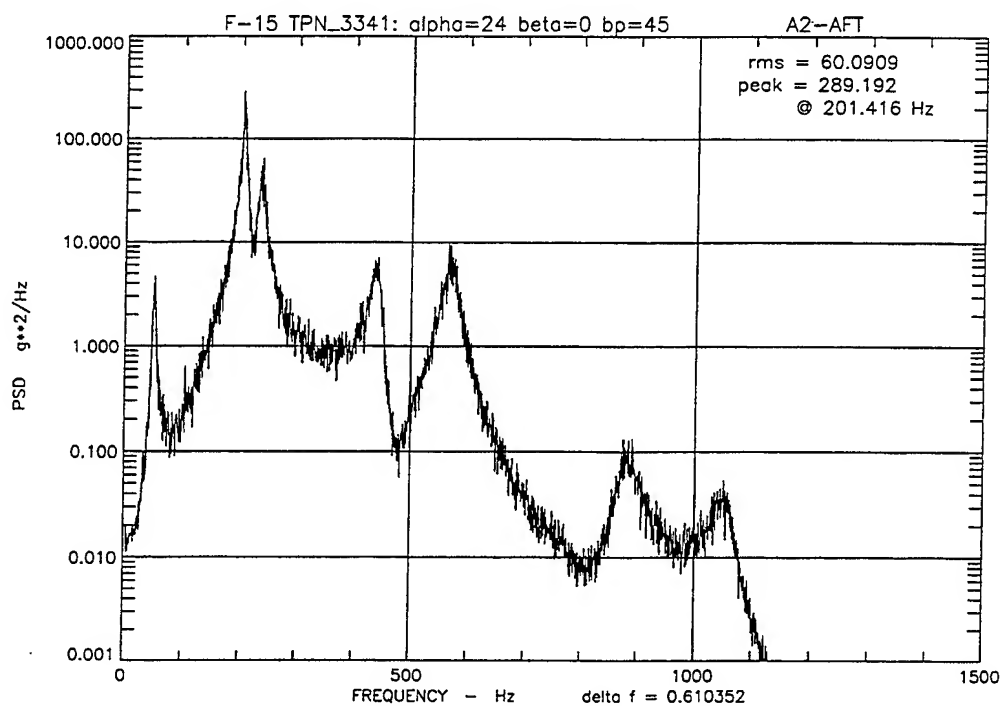
F-15 TPN\_3339: alpha=20 beta=0 bp=45



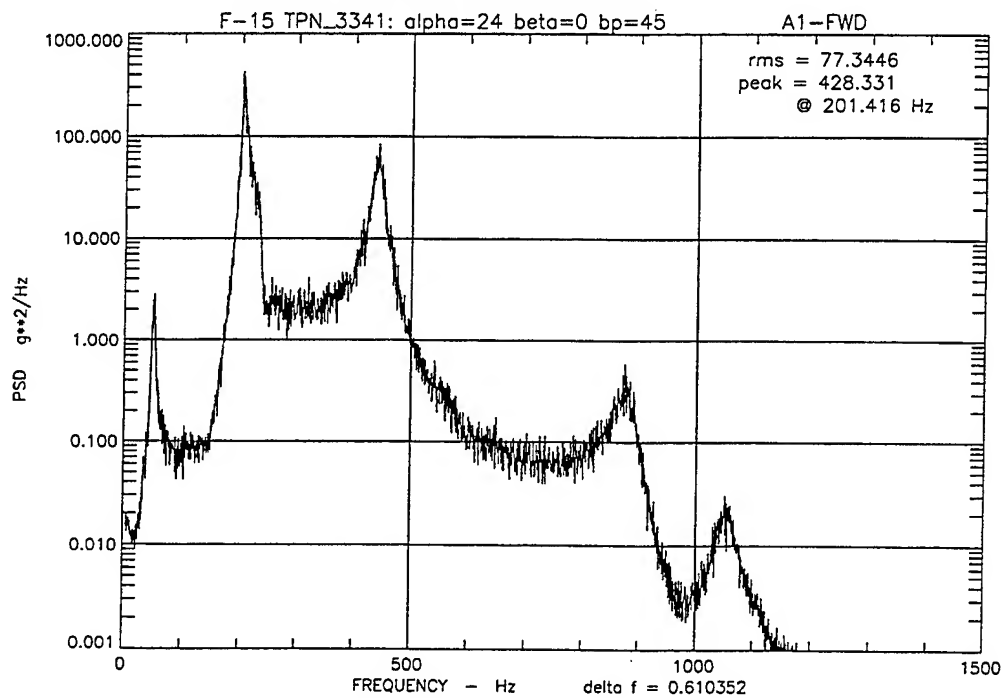
F-15 TPN\_3339: alpha=20 beta=0 bp=45



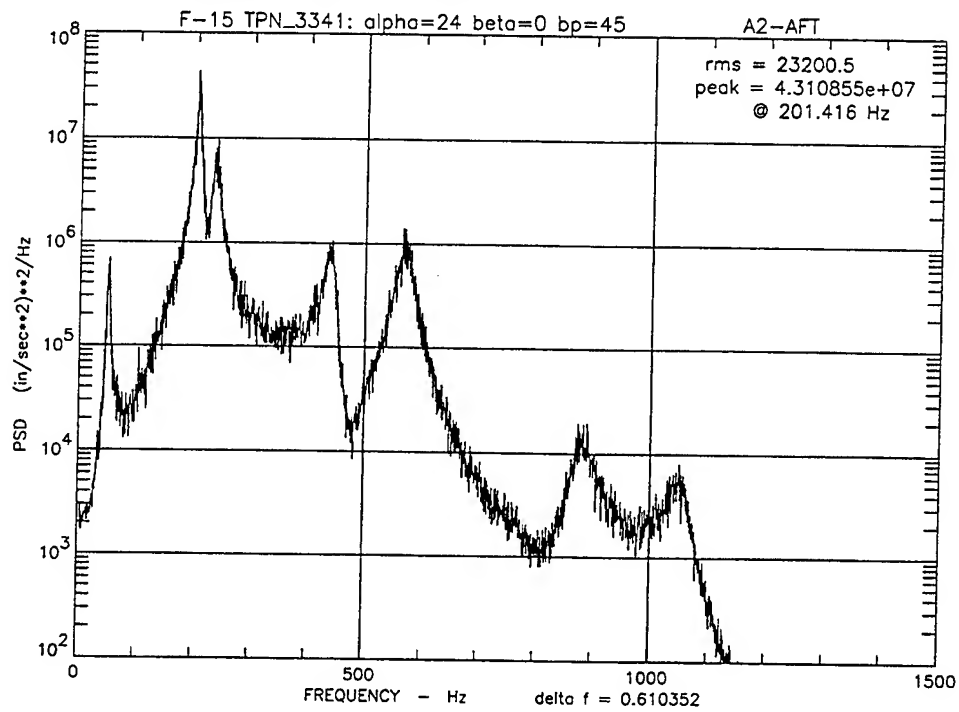
F-15 TPN\_3341: alpha=24 beta=0 bp=45



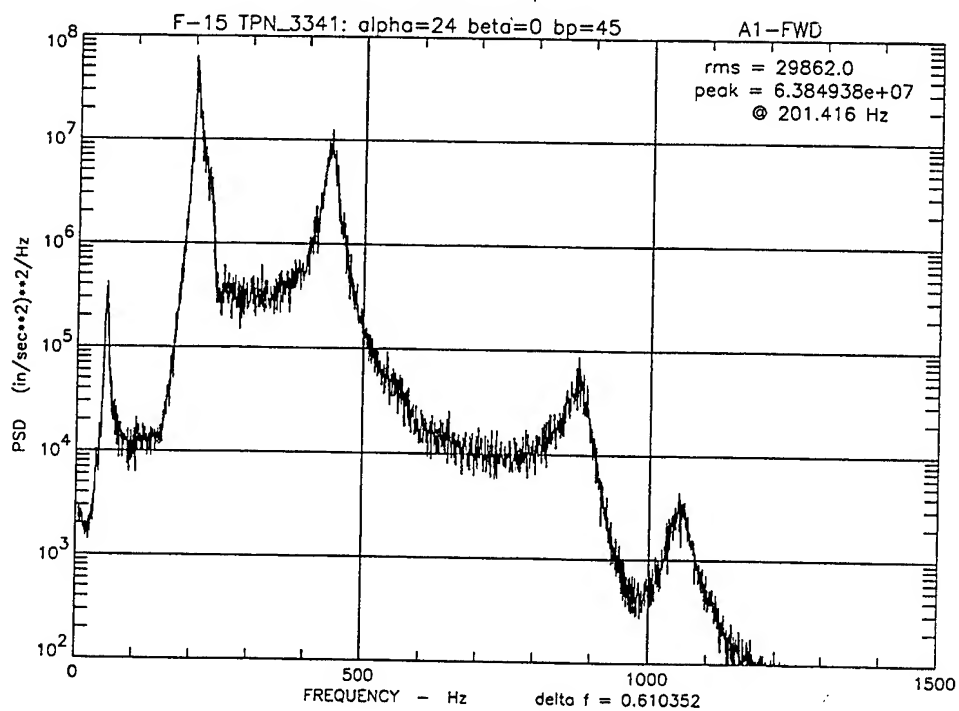
F-15 TPN\_3341: alpha=24 beta=0 bp=45



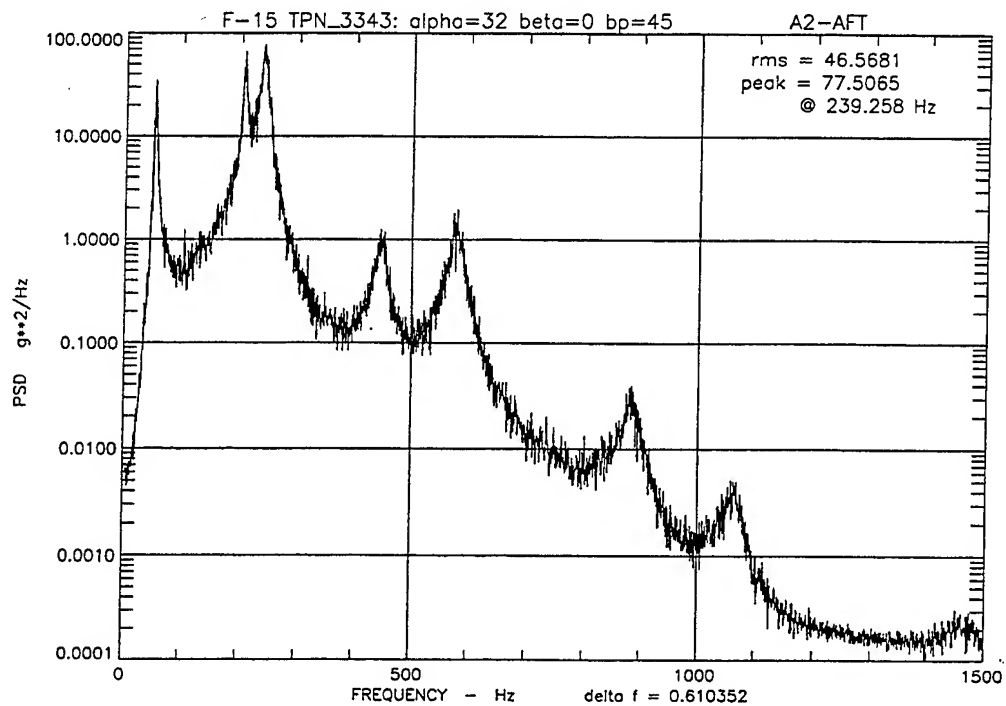
F-15 TPN\_3341: alpha=24 beta=0 bp=45



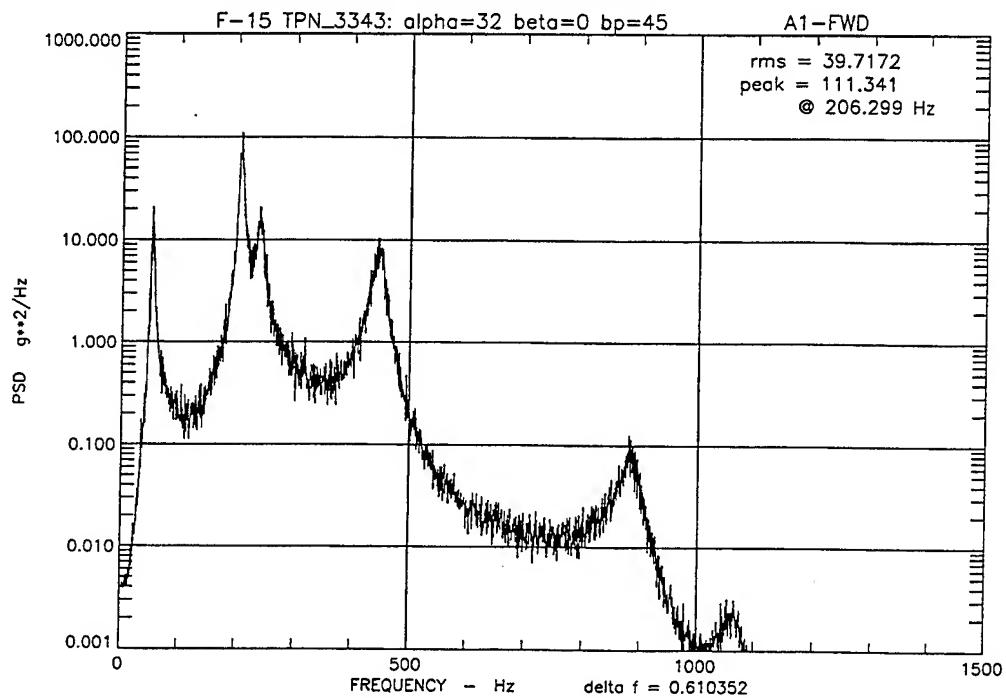
F-15 TPN\_3341: alpha=24 beta=0 bp=45



F-15 TPN\_3343: alpha=32 beta=0 bp=45

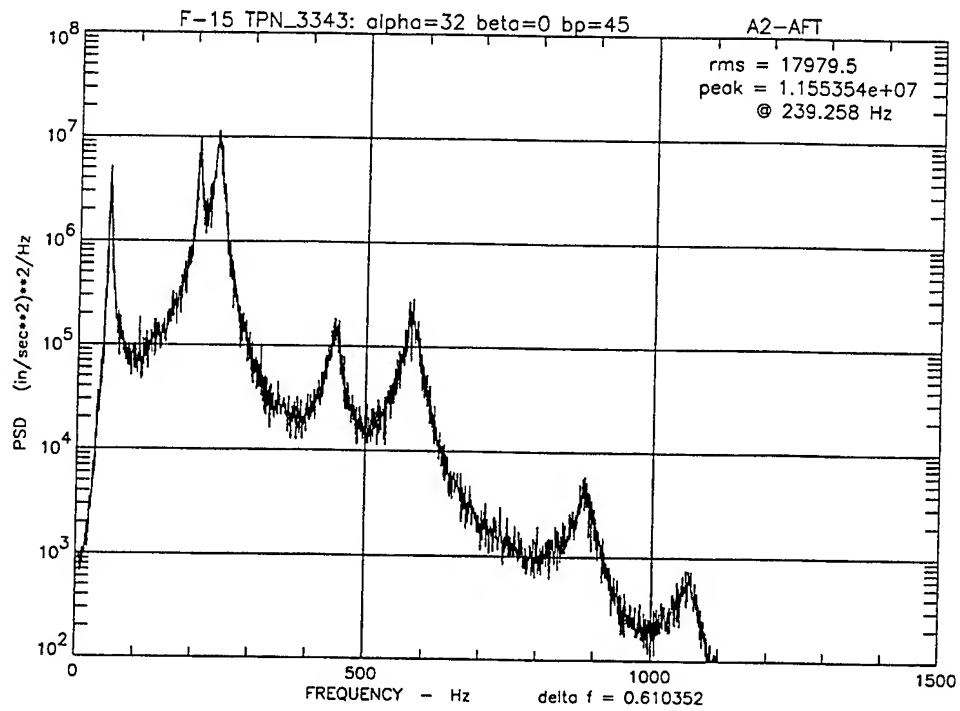


F-15 TPN\_3343: alpha=32 beta=0 bp=45

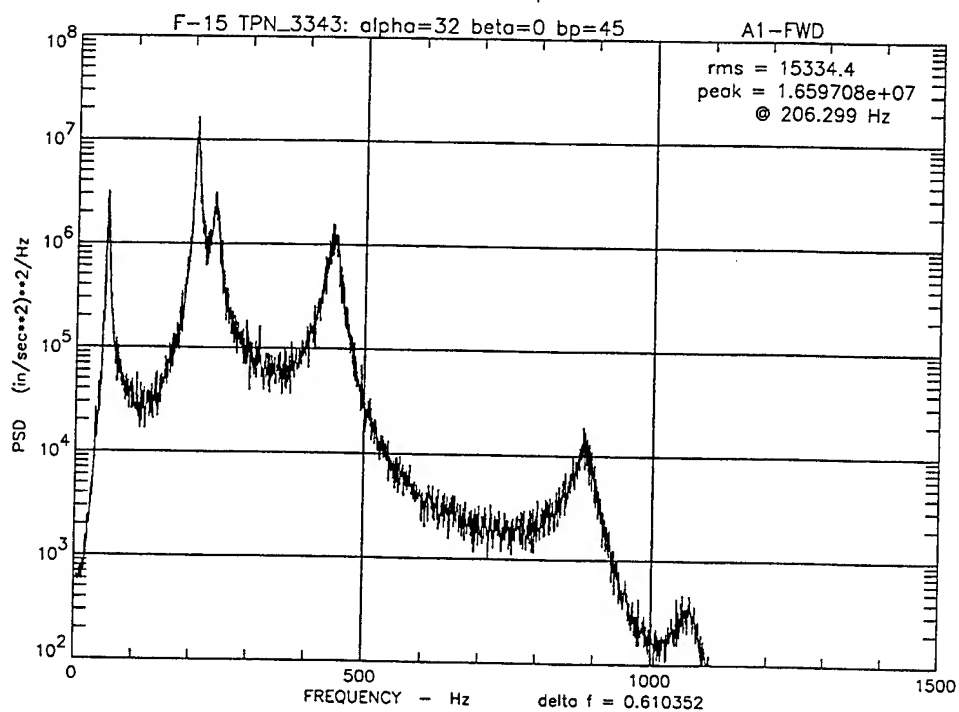




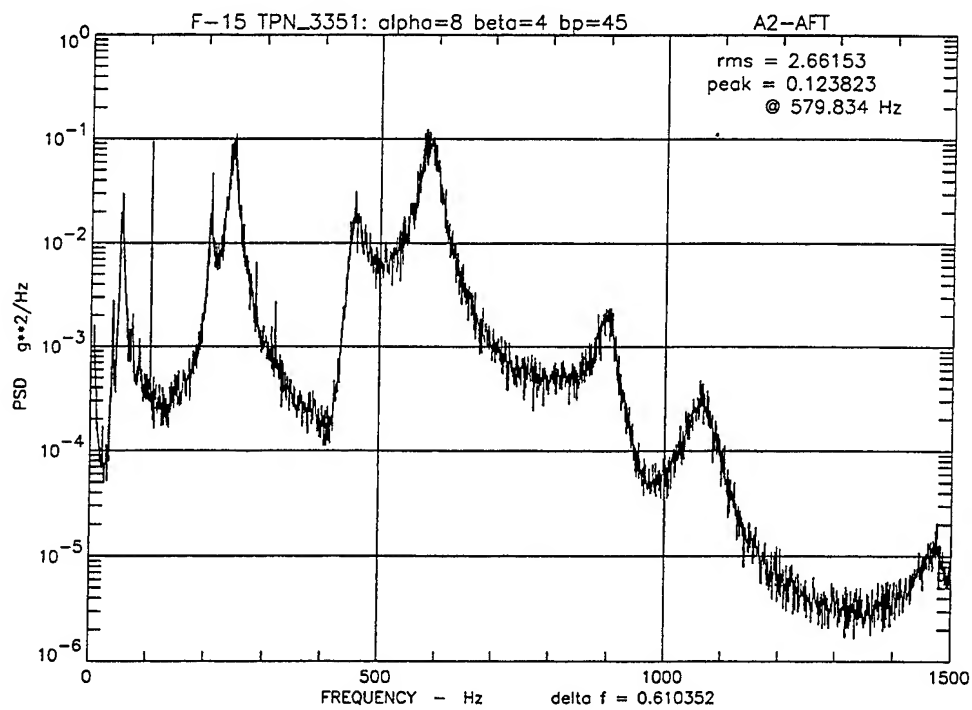
F-15 TPN\_3343: alpha=32 beta=0 bp=45



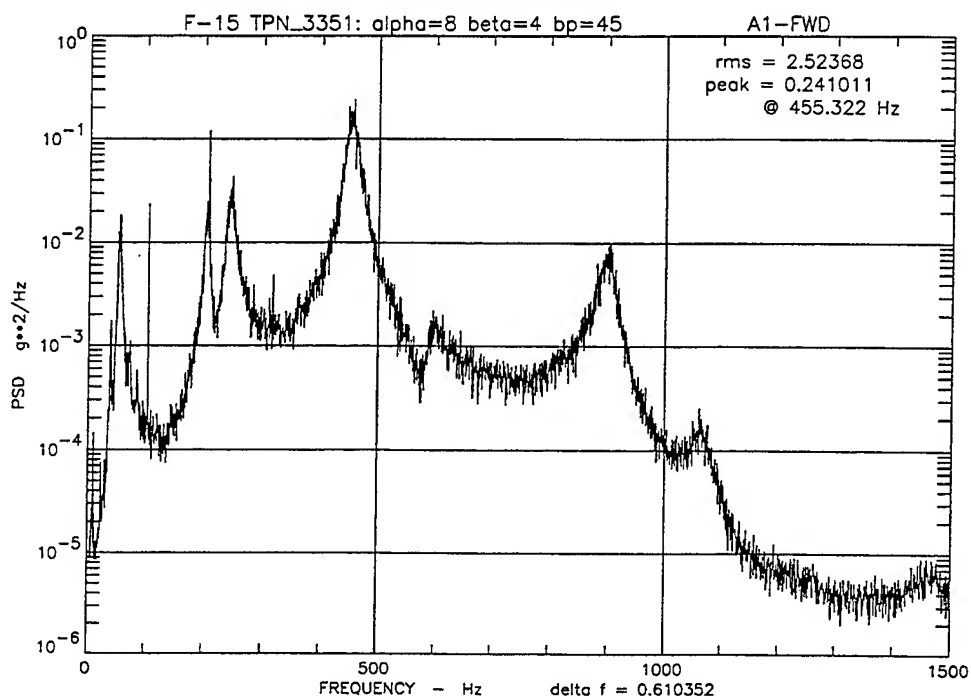
F-15 TPN\_3343: alpha=32 beta=0 bp=45

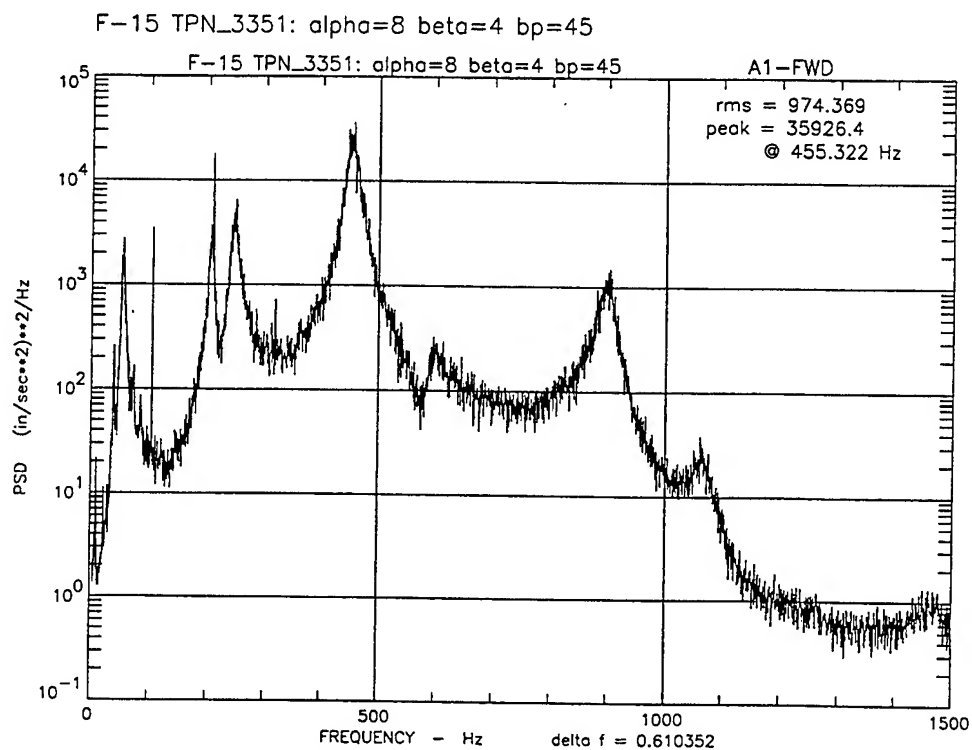
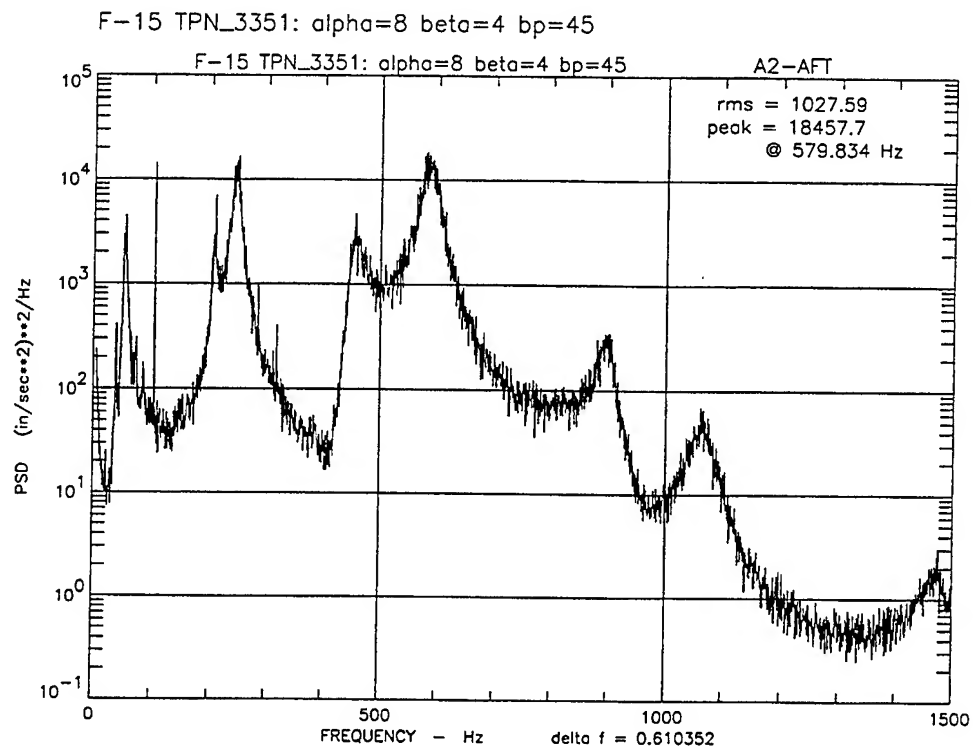


F-15 TPN\_3351: alpha=8 beta=4 bp=45

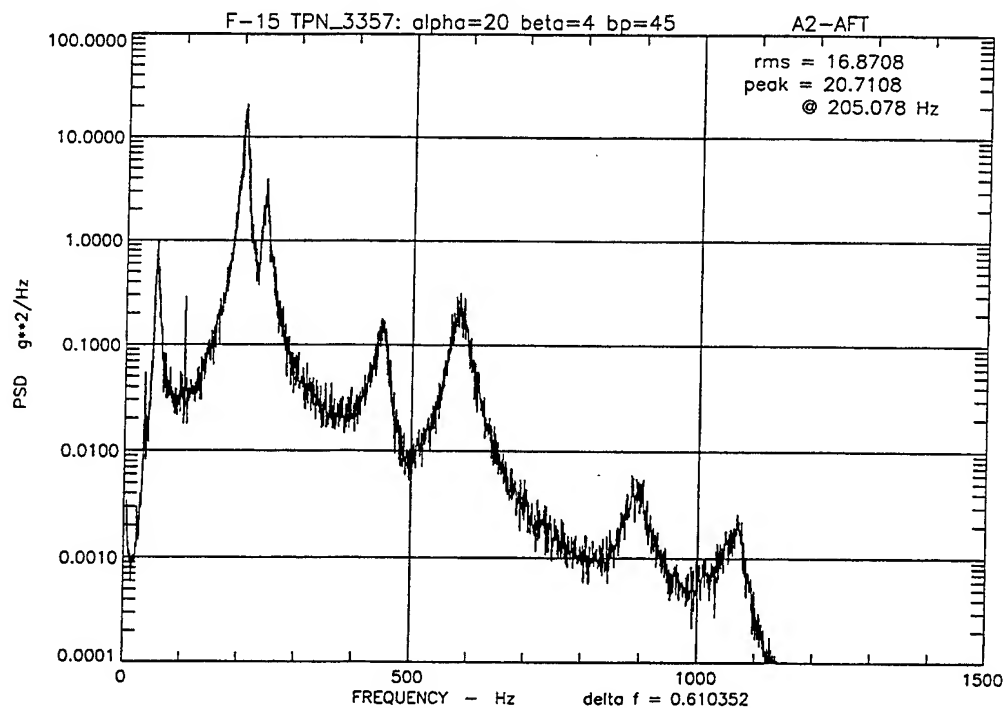


F-15 TPN\_3351: alpha=8 beta=4 bp=45

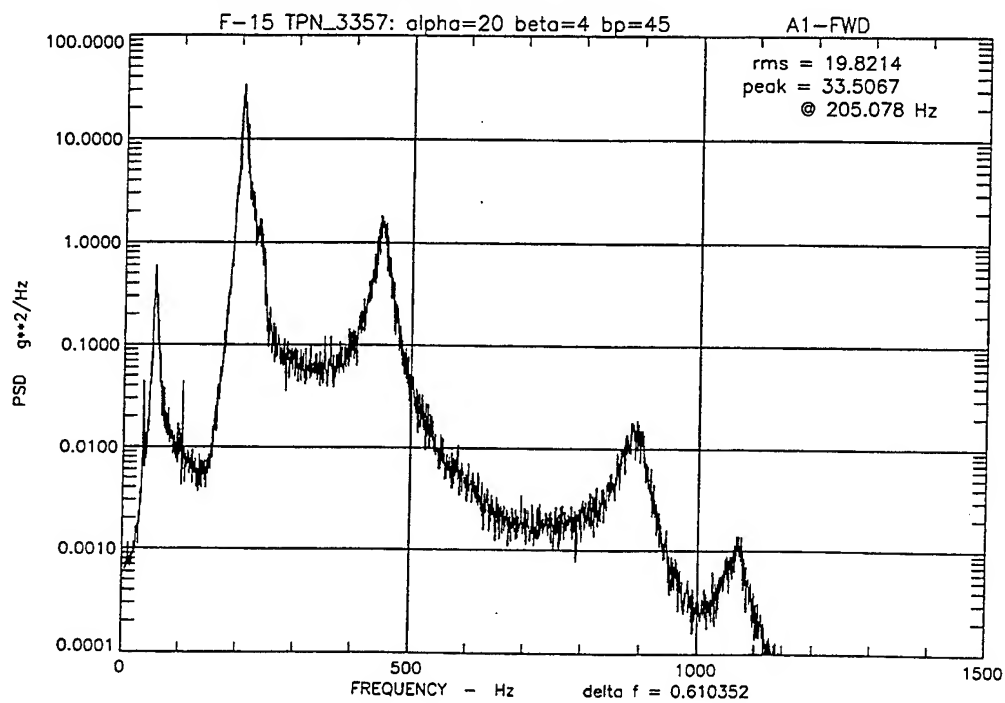




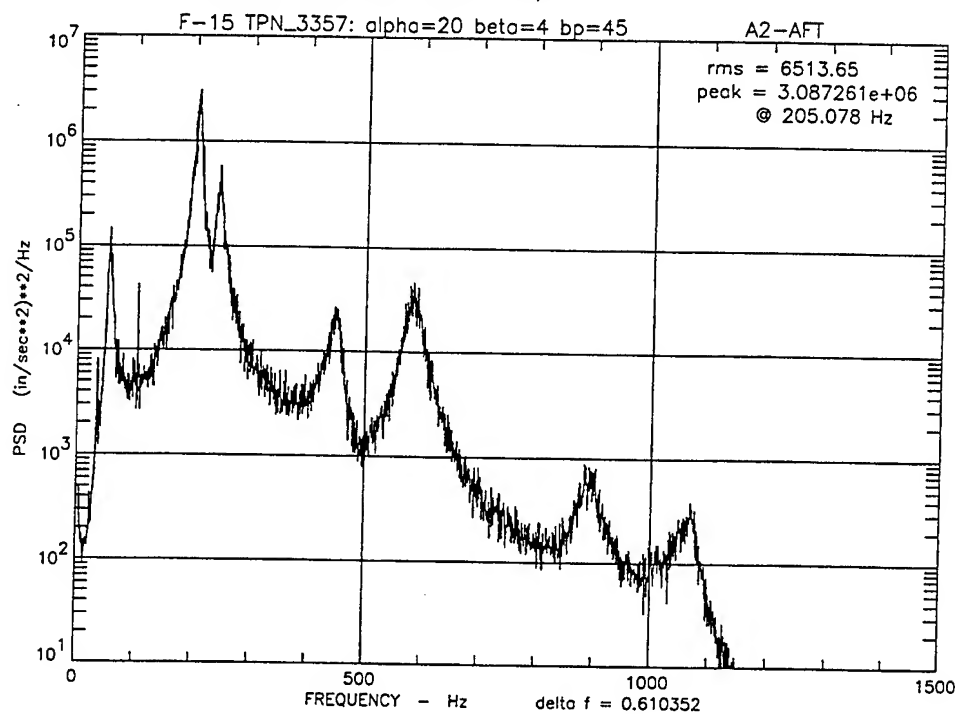
F-15 TPN\_3357: alpha=20 beta=4 bp=45



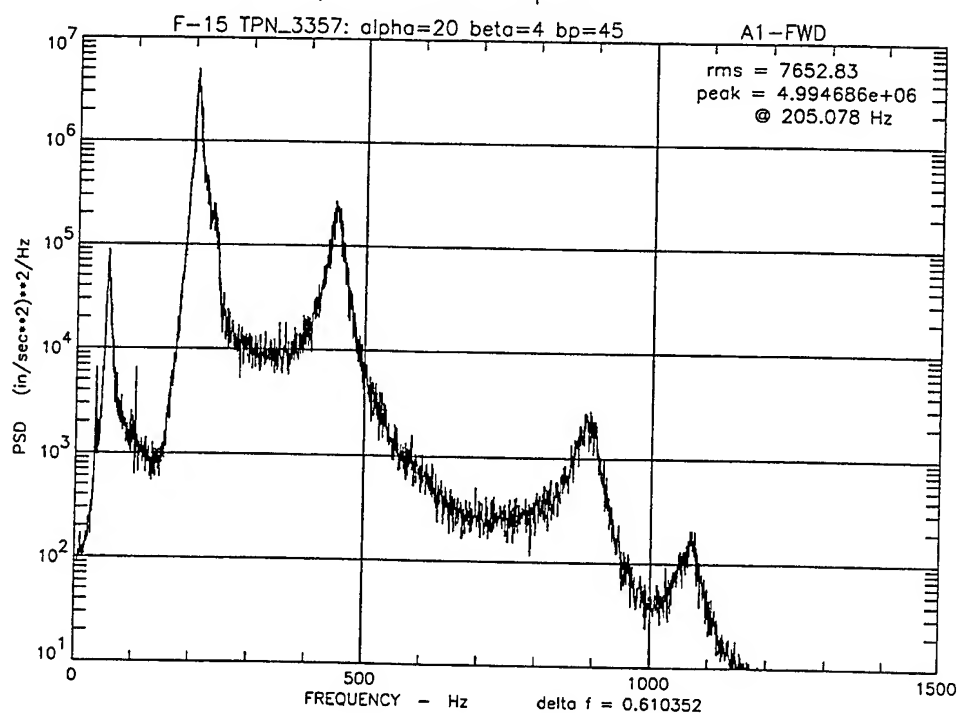
F-15 TPN\_3357: alpha=20 beta=4 bp=45



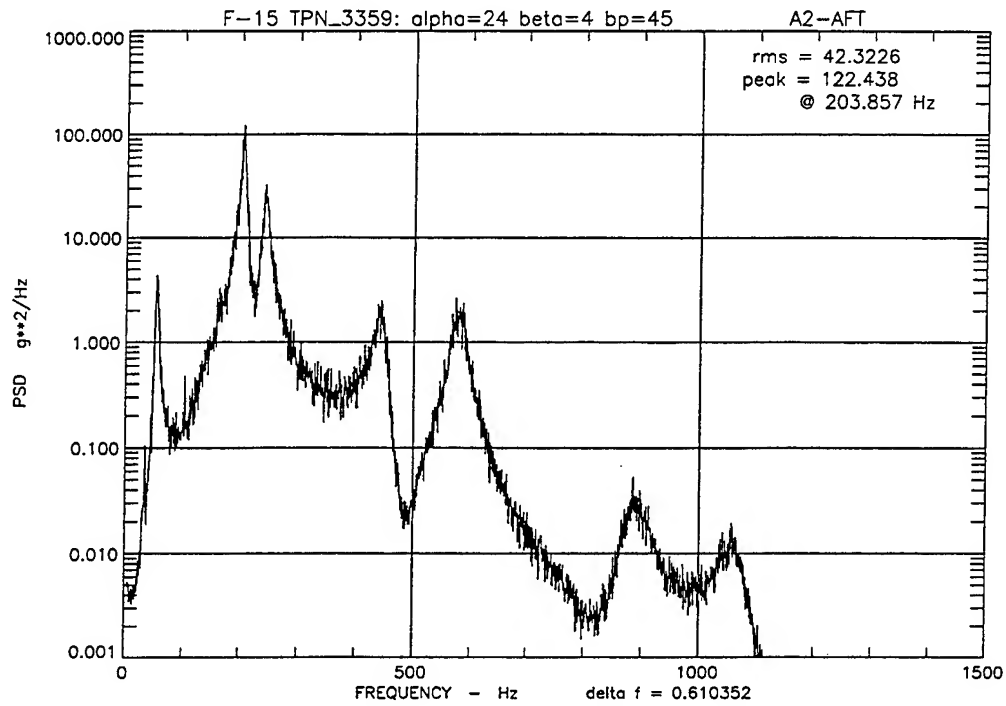
F-15 TPN\_3357: alpha=20 beta=4 bp=45



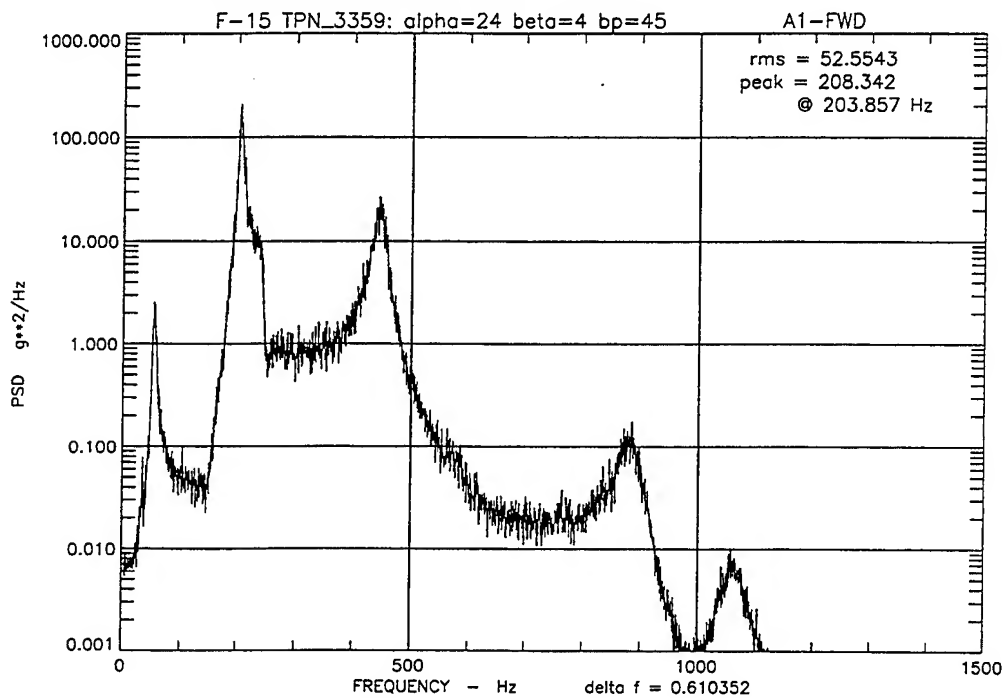
F-15 TPN\_3357: alpha=20 beta=4 bp=45



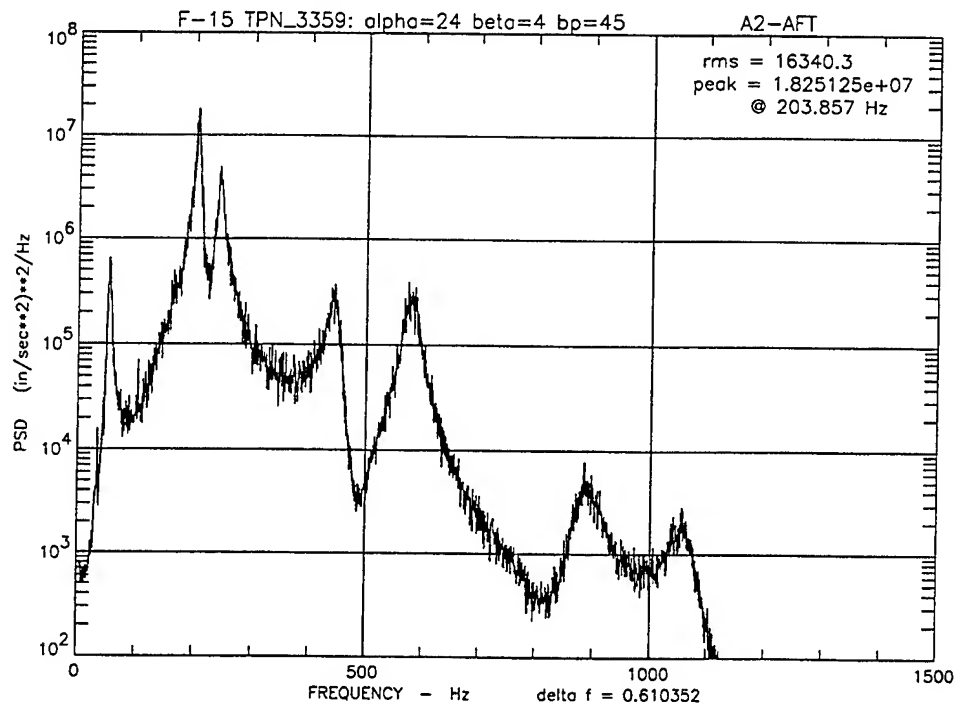
F-15 TPN\_3359: alpha=24 beta=4 bp=45



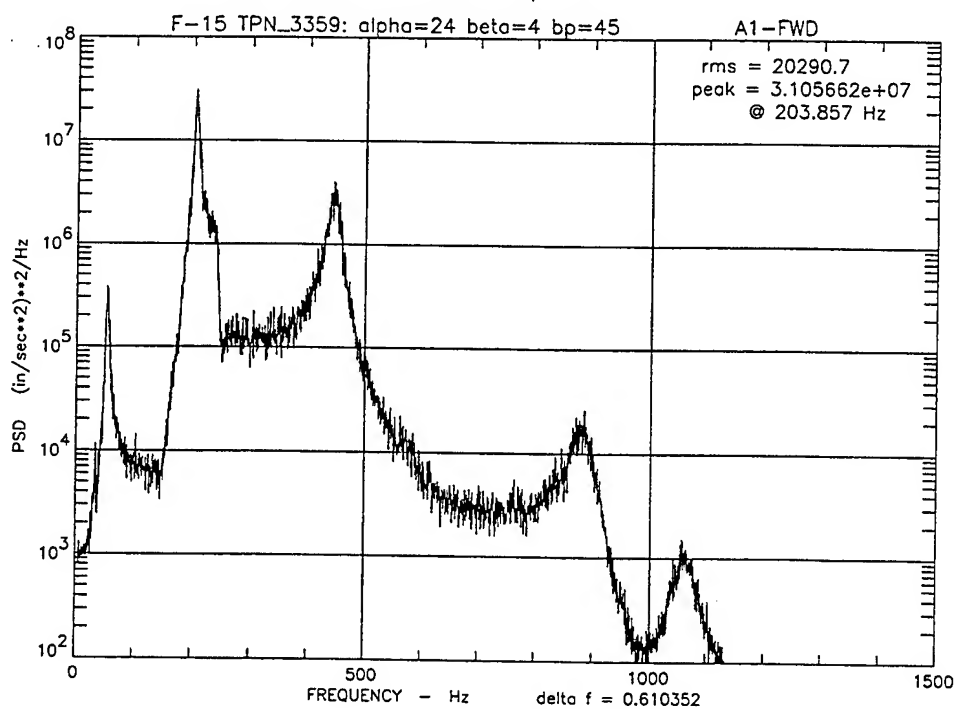
F-15 TPN\_3359: alpha=24 beta=4 bp=45

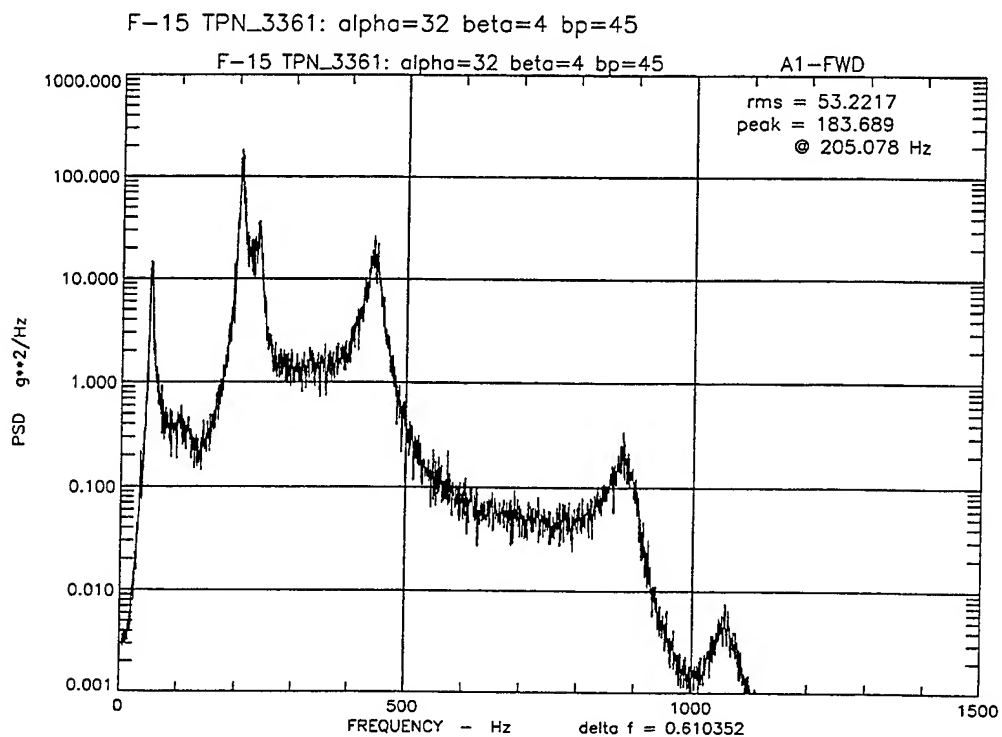
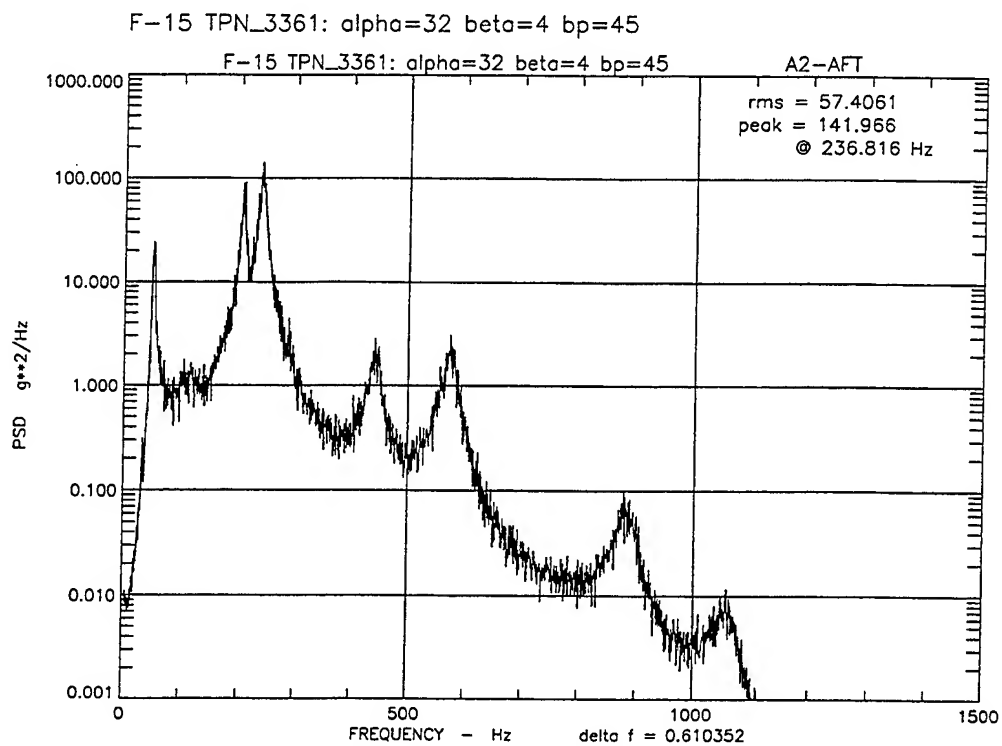


F-15 TPN\_3359: alpha=24 beta=4 bp=45

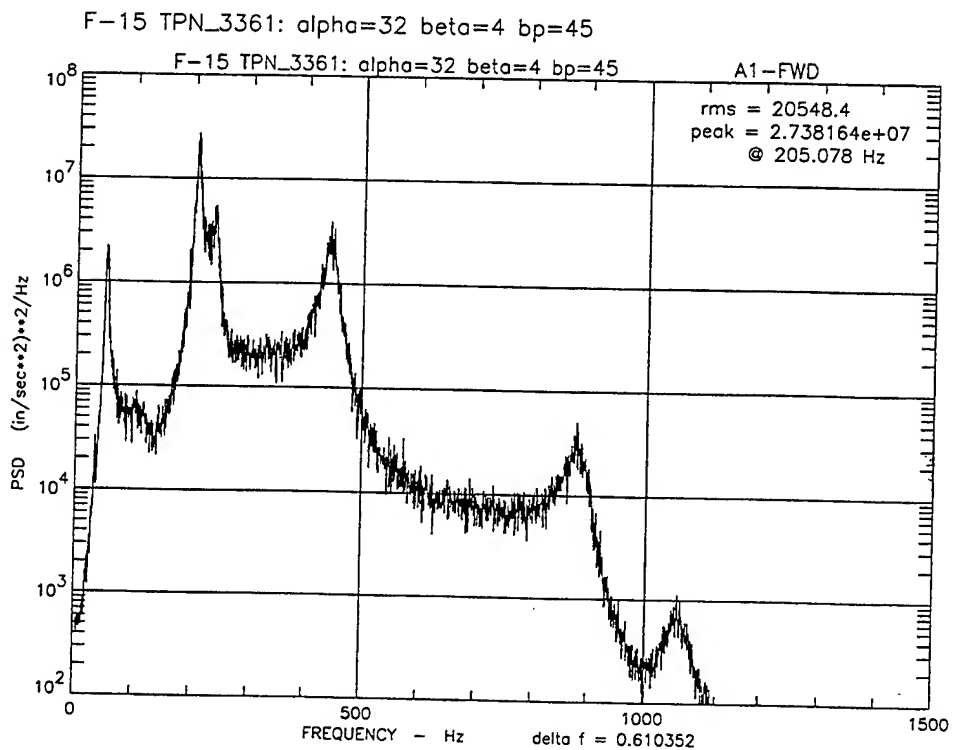
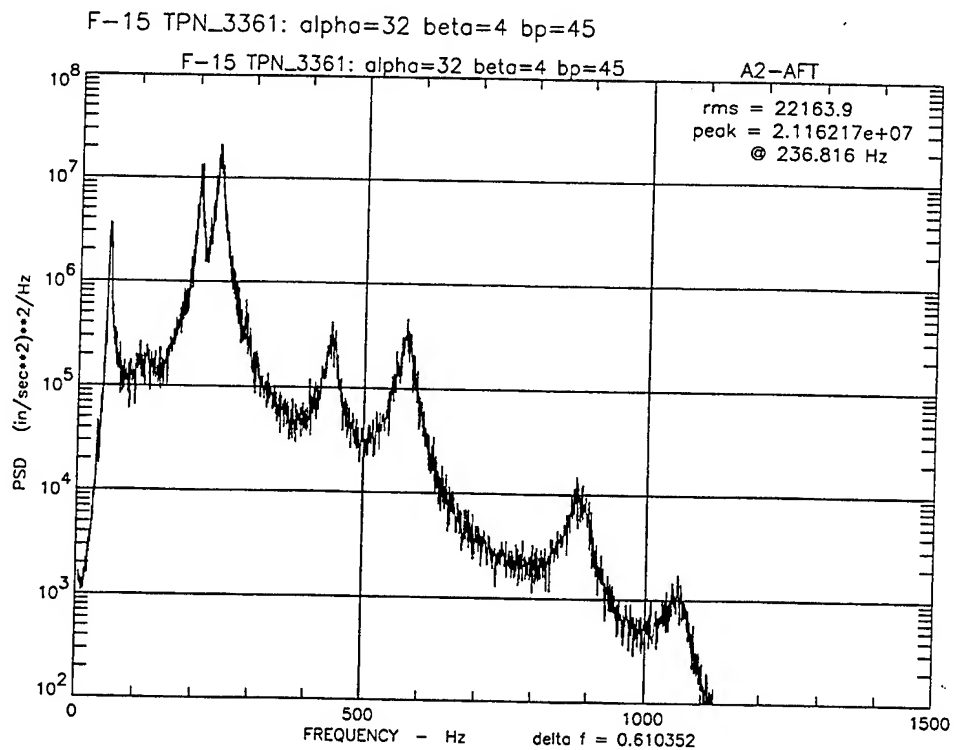


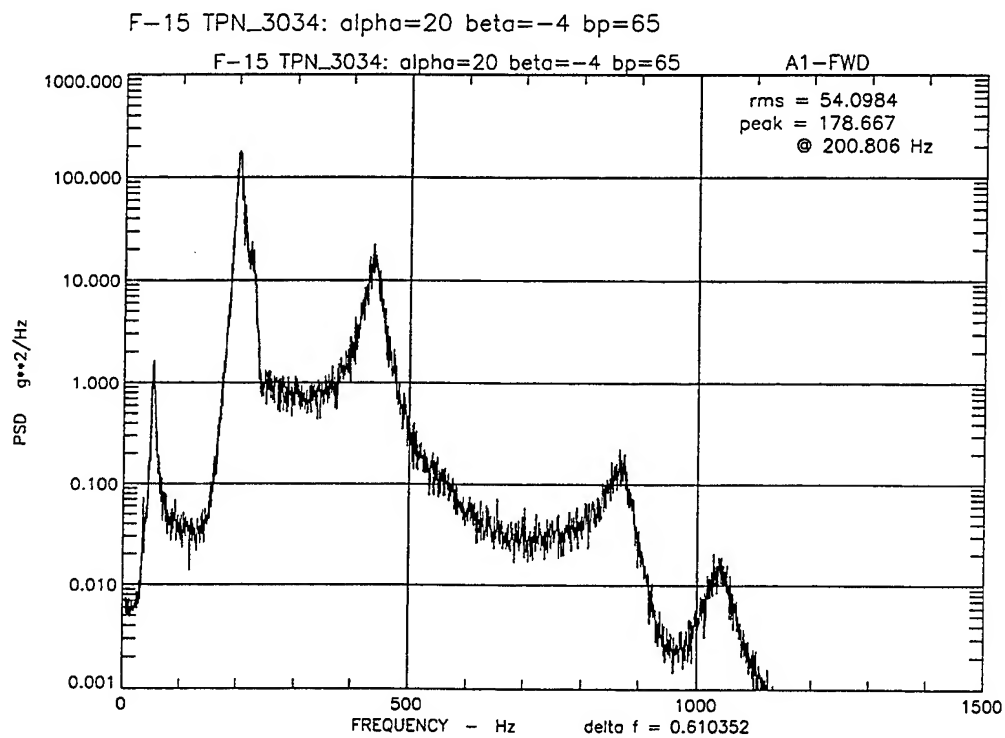
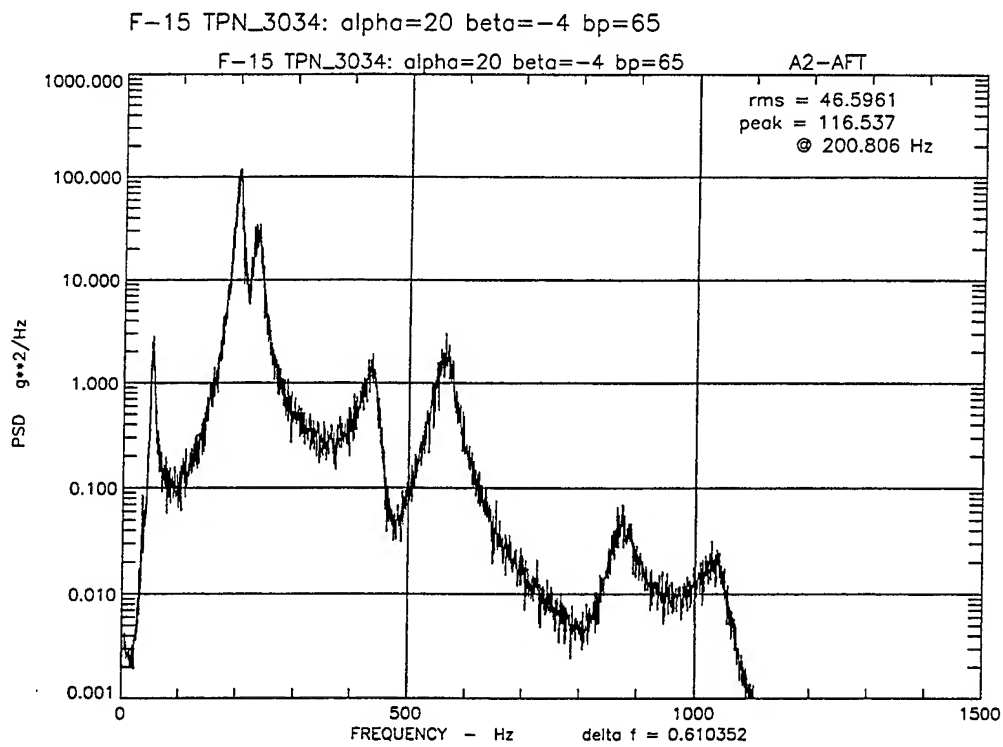
F-15 TPN\_3359: alpha=24 beta=4 bp=45



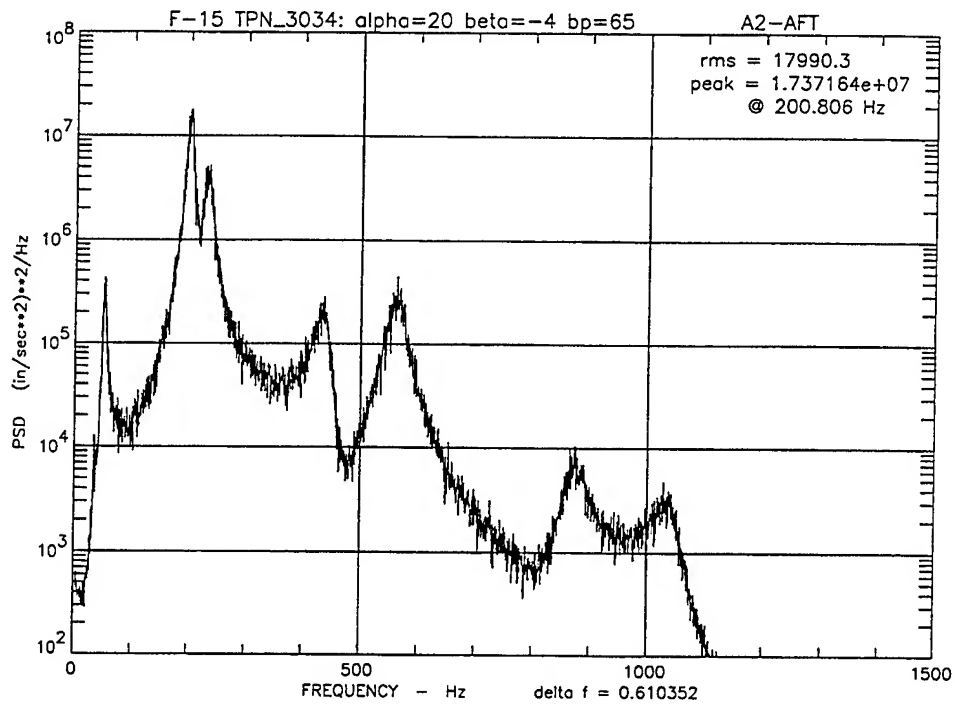




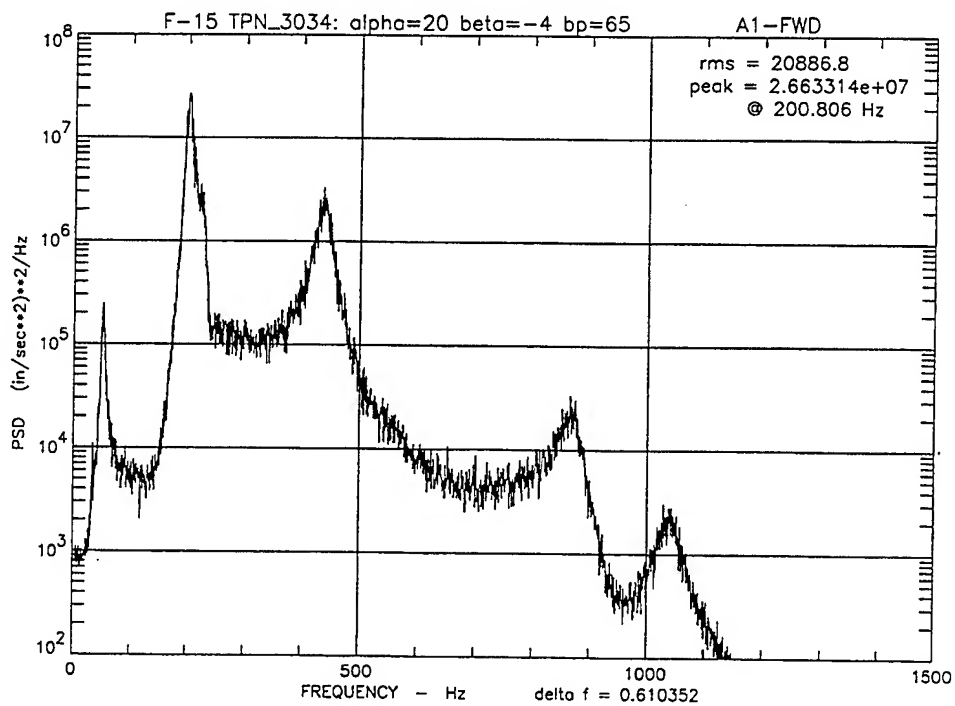




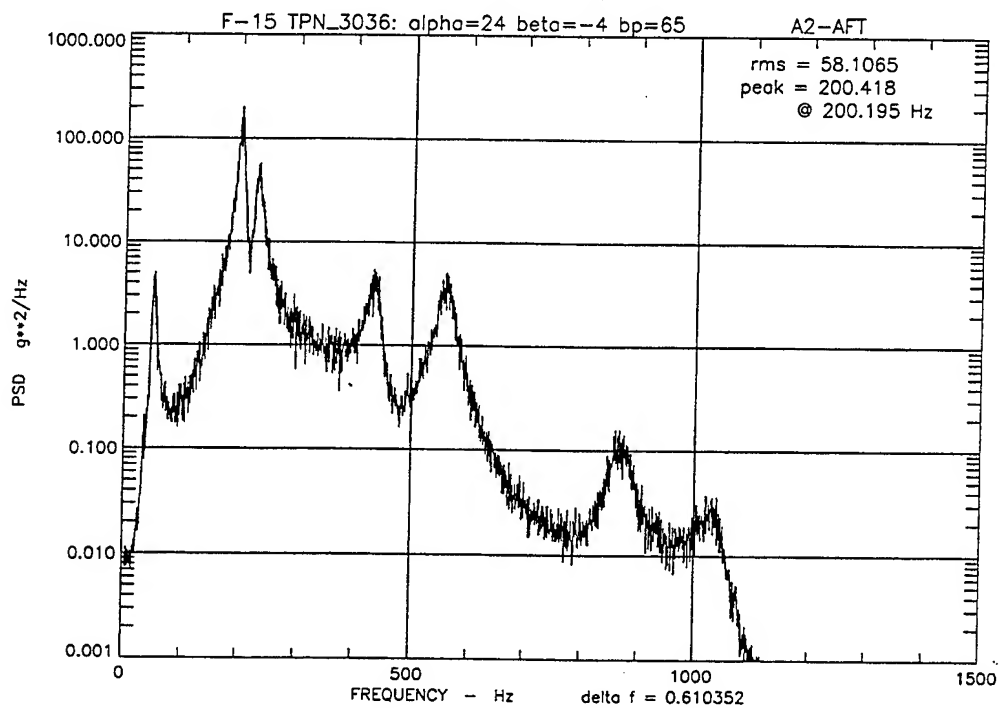
F-15 TPN\_3034: alpha=20 beta=-4 bp=65



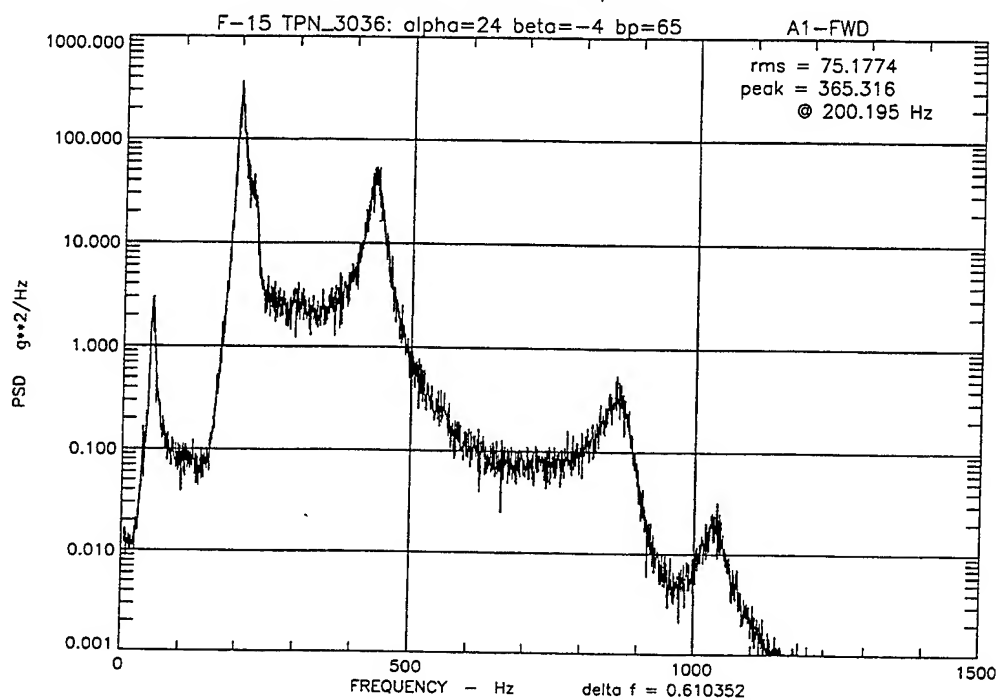
F-15 TPN\_3034: alpha=20 beta=-4 bp=65



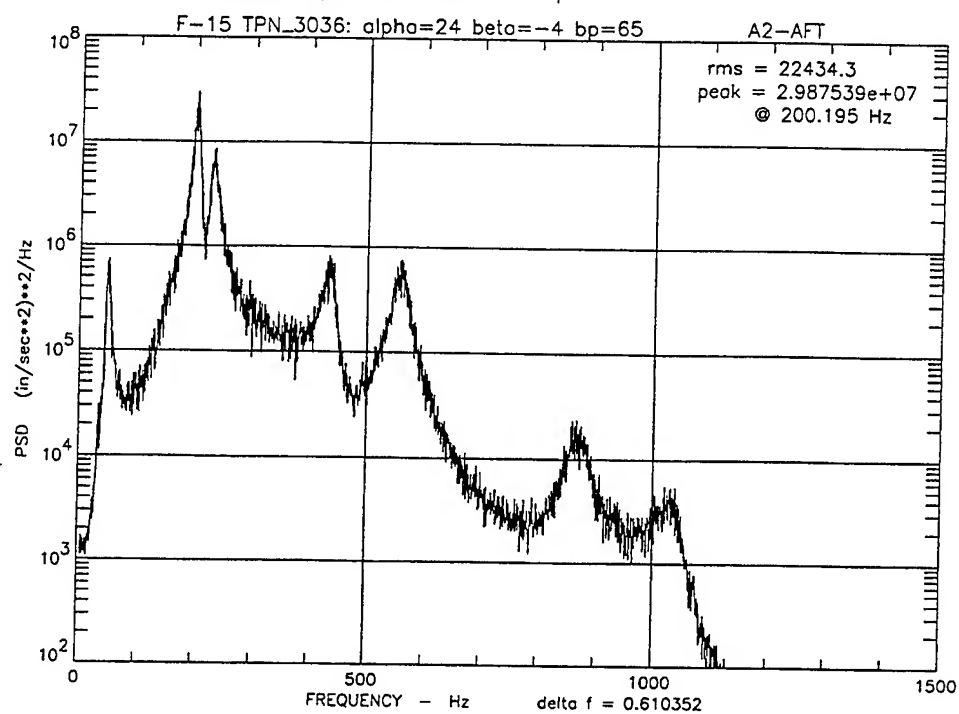
F-15 TPN\_3036: alpha=24 beta=-4 bp=65



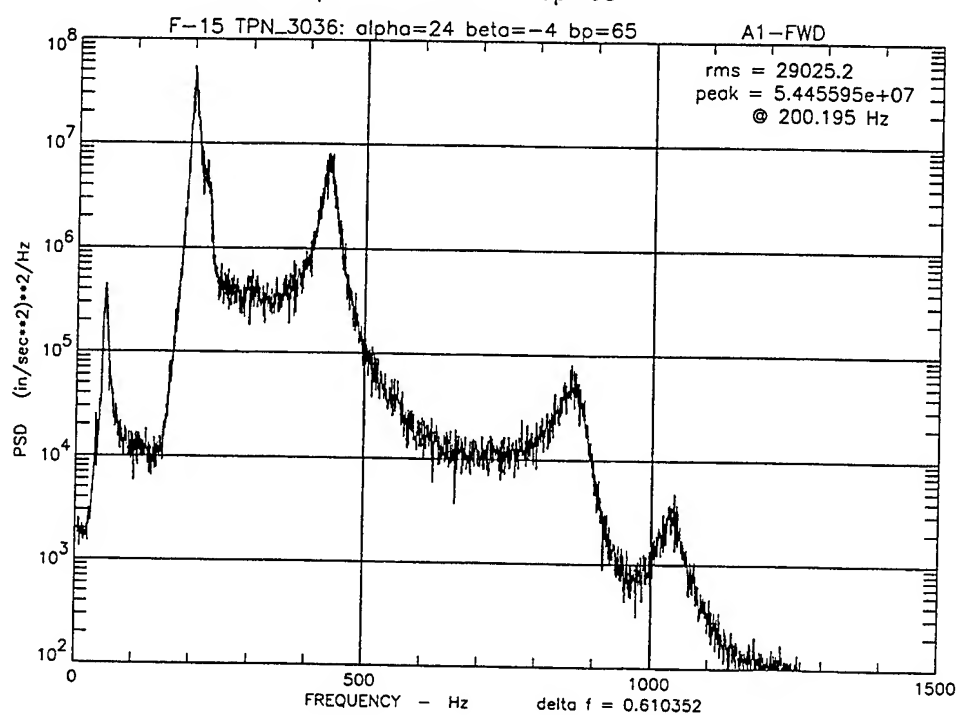
F-15 TPN\_3036: alpha=24 beta=-4 bp=65



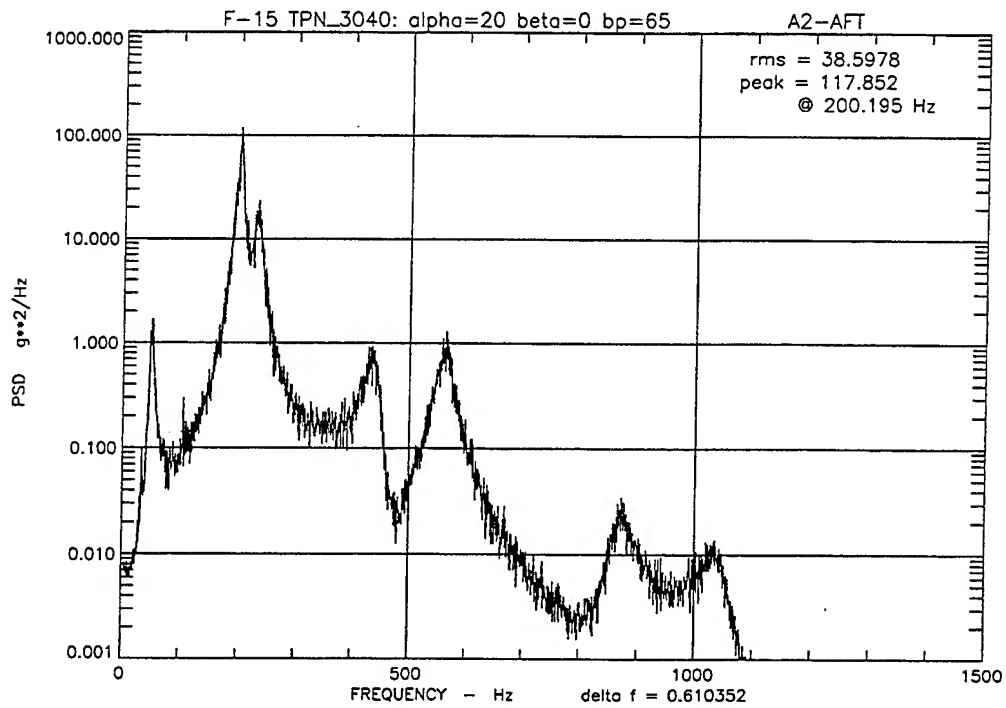
F-15 TPN\_3036: alpha=24 beta=-4 bp=65



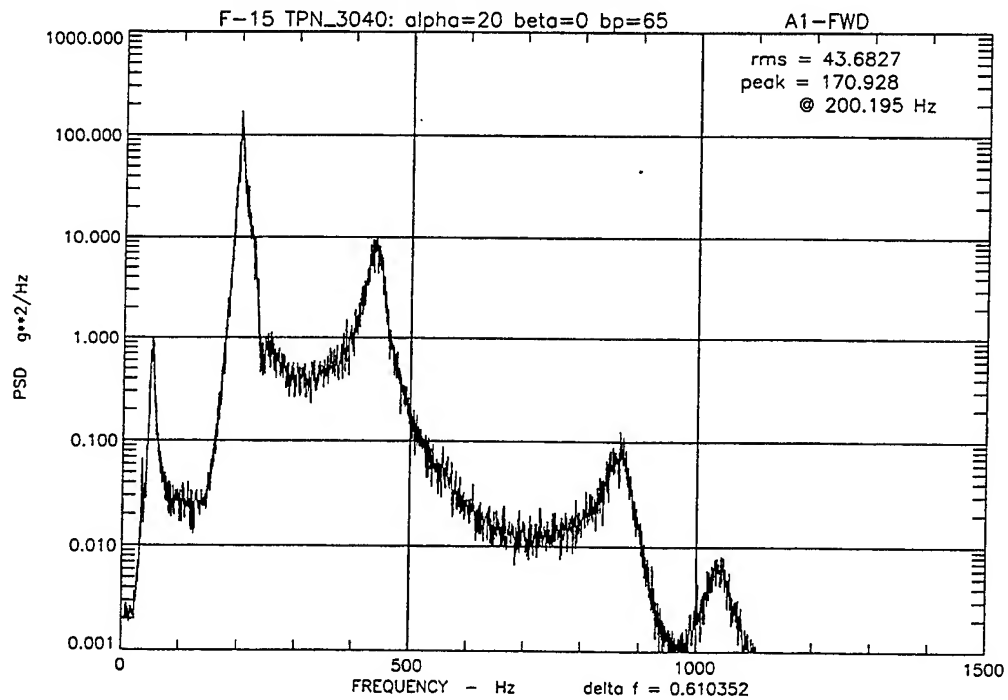
F-15 TPN\_3036: alpha=24 beta=-4 bp=65

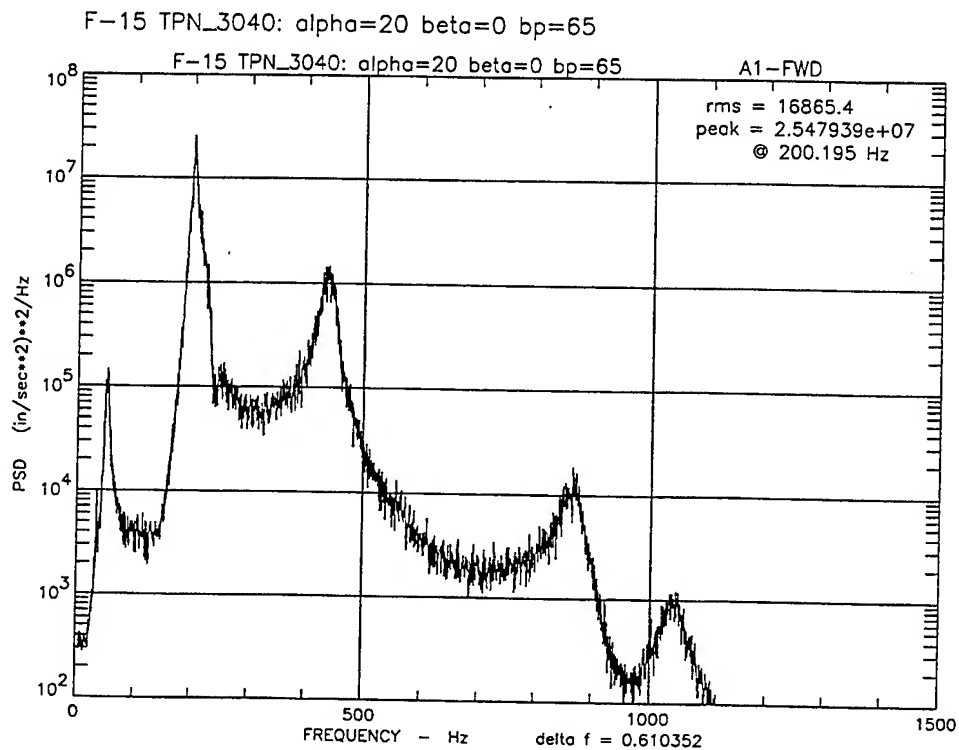
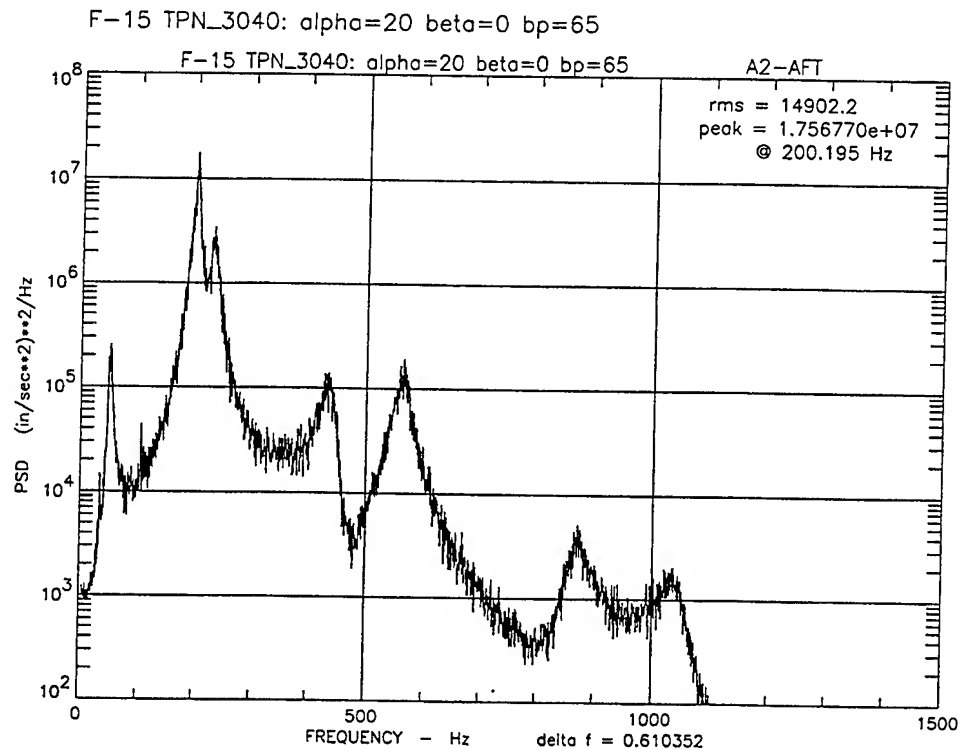


F-15 TPN\_3040: alpha=20 beta=0 bp=65

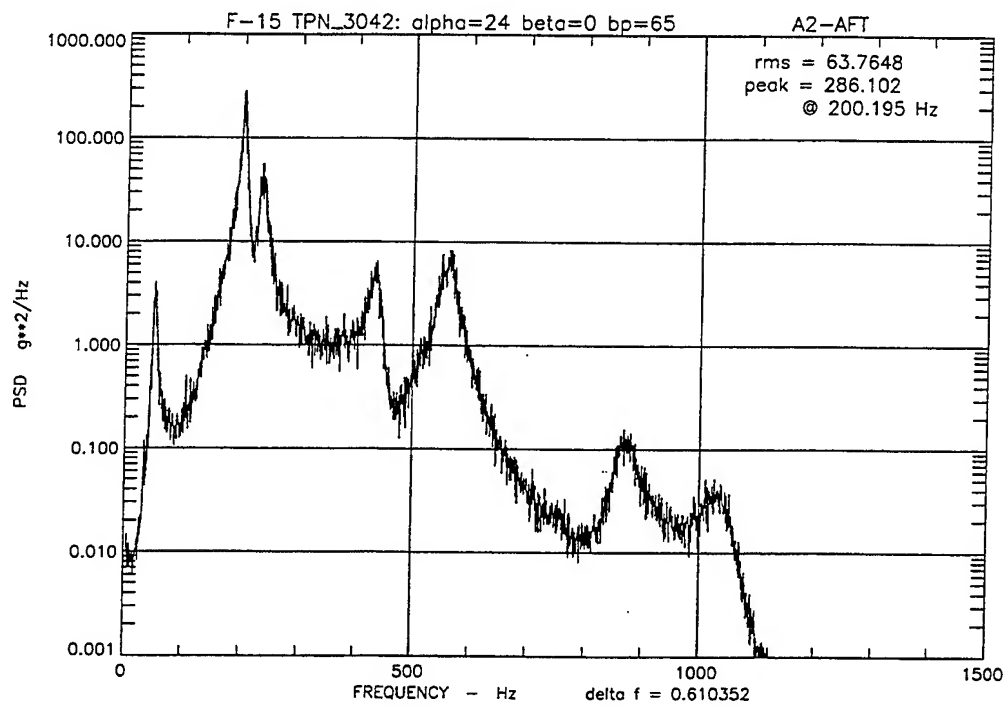


F-15 TPN\_3040: alpha=20 beta=0 bp=65

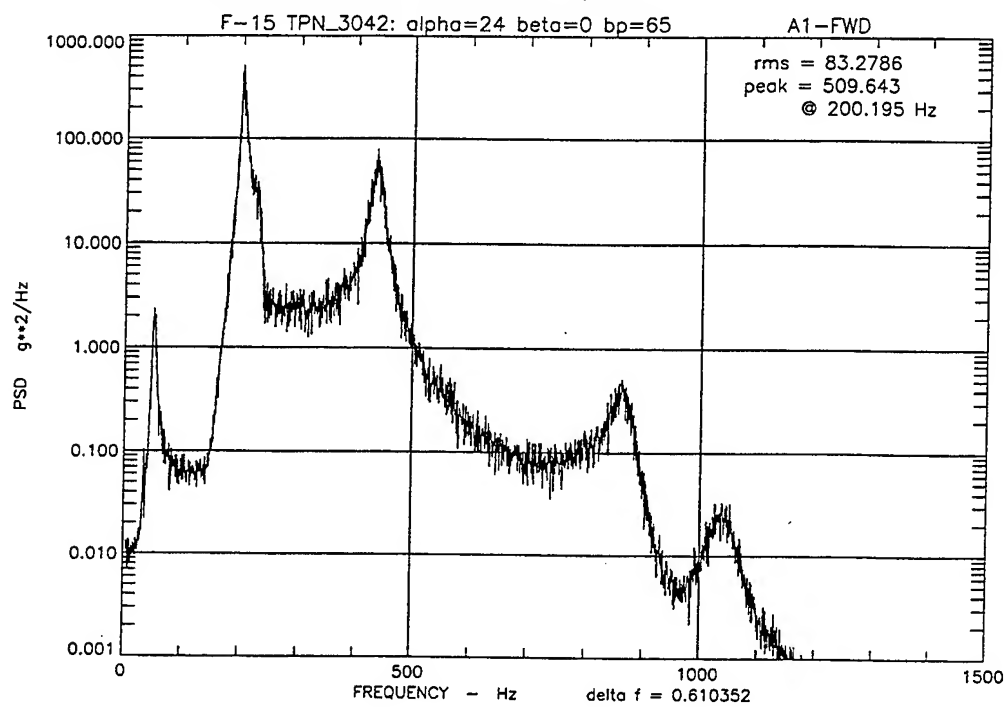




F-15 TPN\_3042: alpha=24 beta=0 bp=65

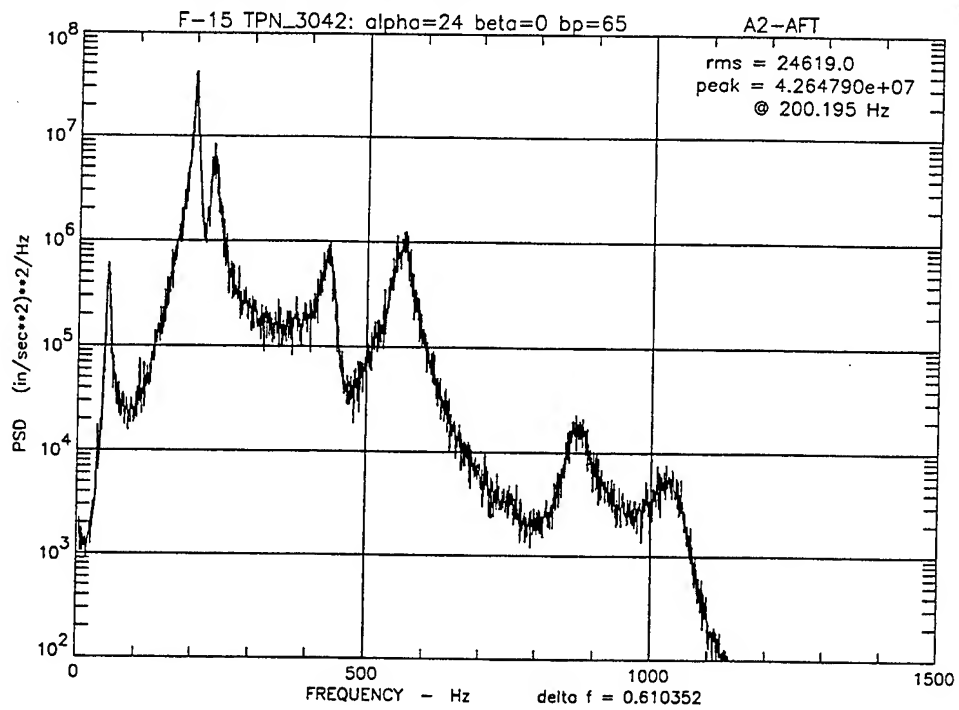


F-15 TPN\_3042: alpha=24 beta=0 bp=65

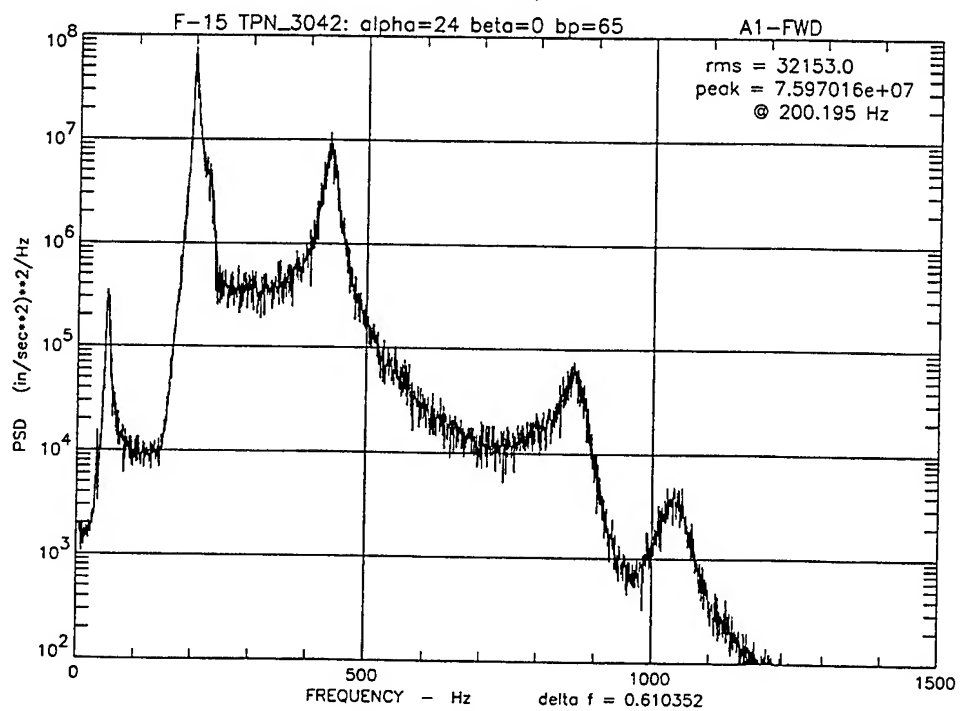




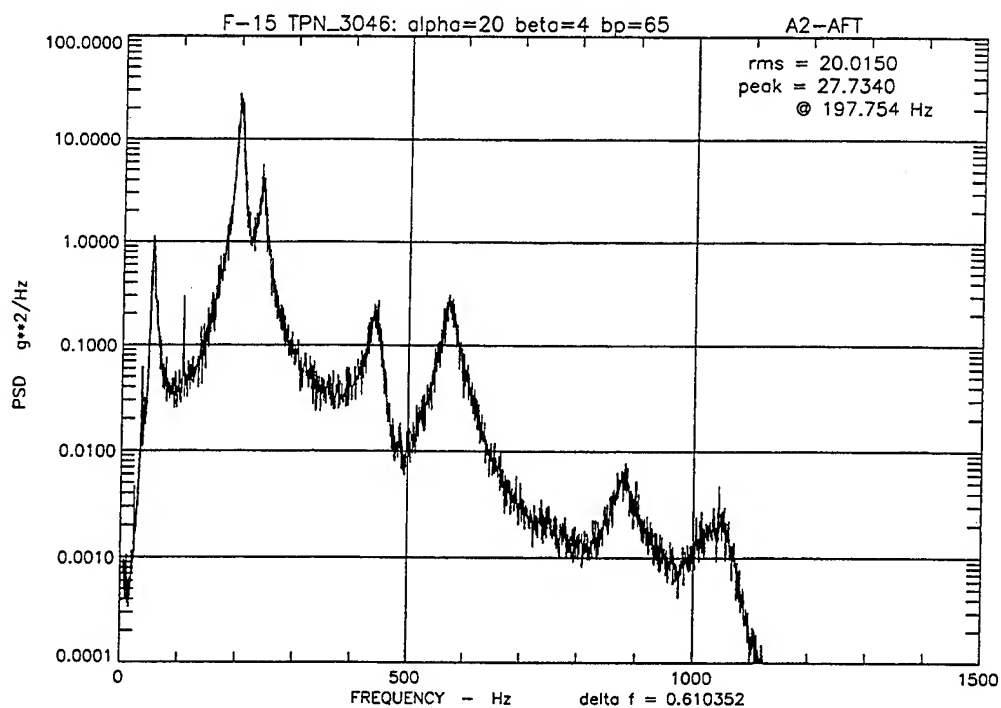
F-15 TPN\_3042: alpha=24 beta=0 bp=65



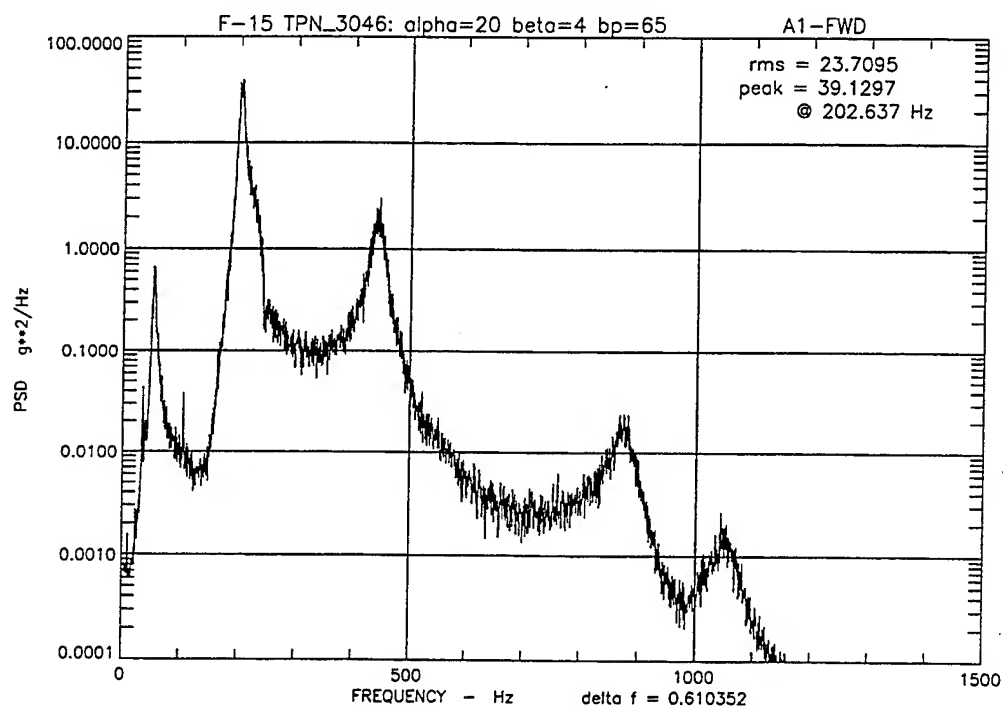
F-15 TPN\_3042: alpha=24 beta=0 bp=65



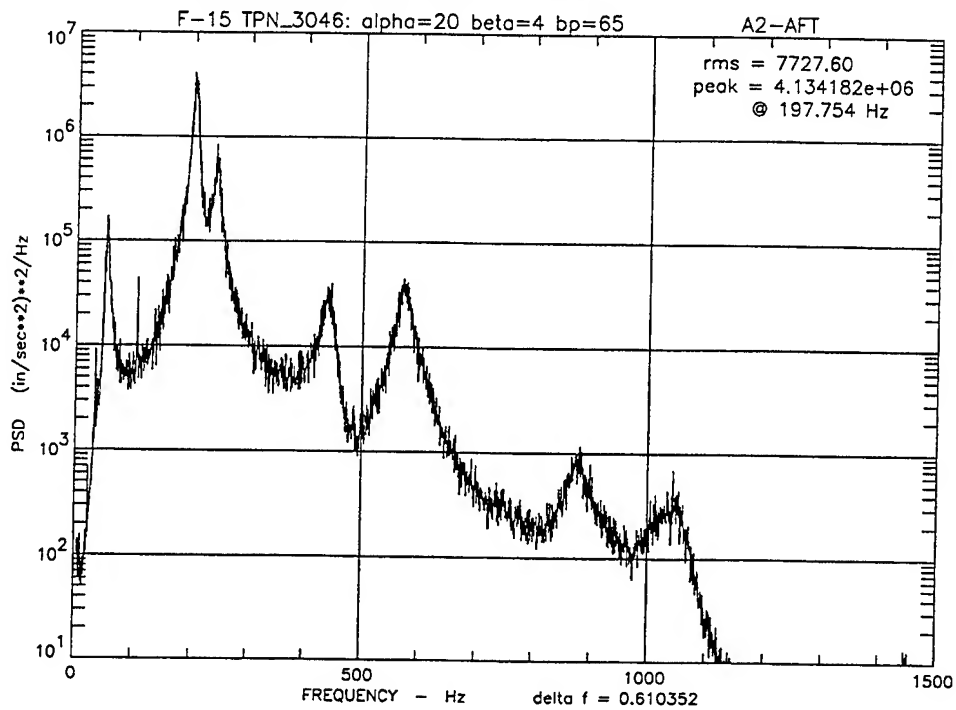
F-15 TPN\_3046: alpha=20 beta=4 bp=65



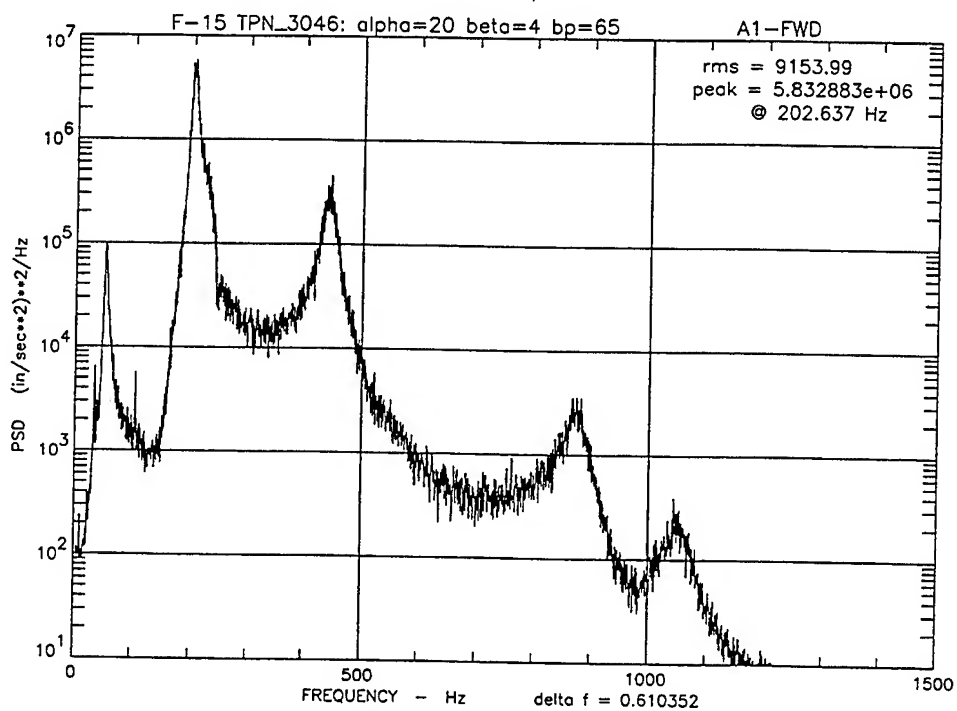
F-15 TPN\_3046: alpha=20 beta=4 bp=65



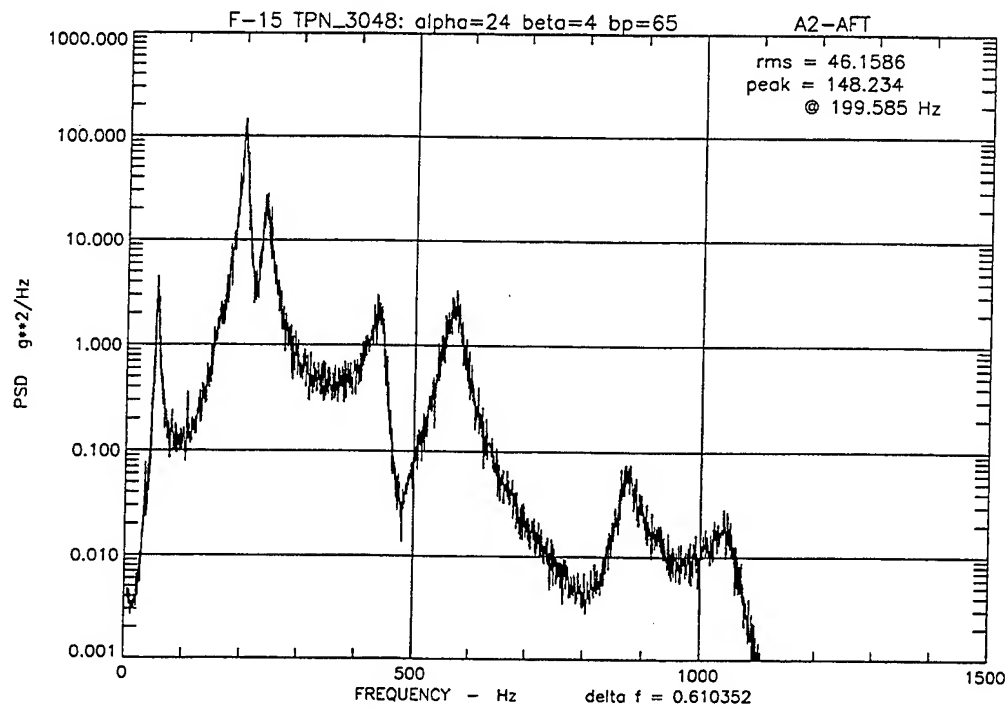
F-15 TPN\_3046: alpha=20 beta=4 bp=65



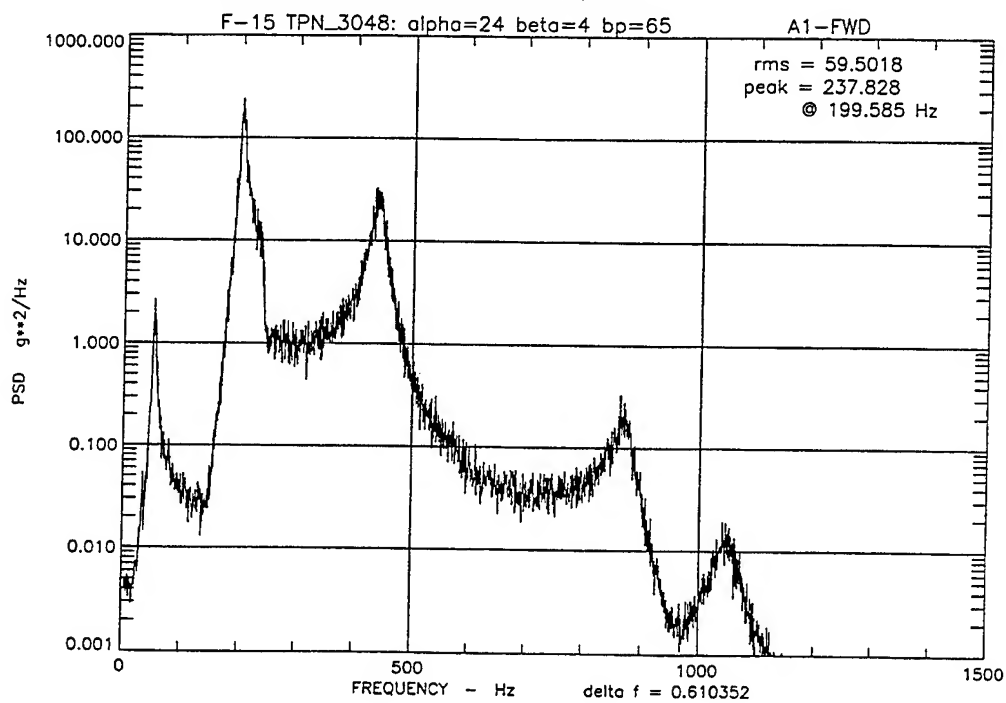
F-15 TPN\_3046: alpha=20 beta=4 bp=65



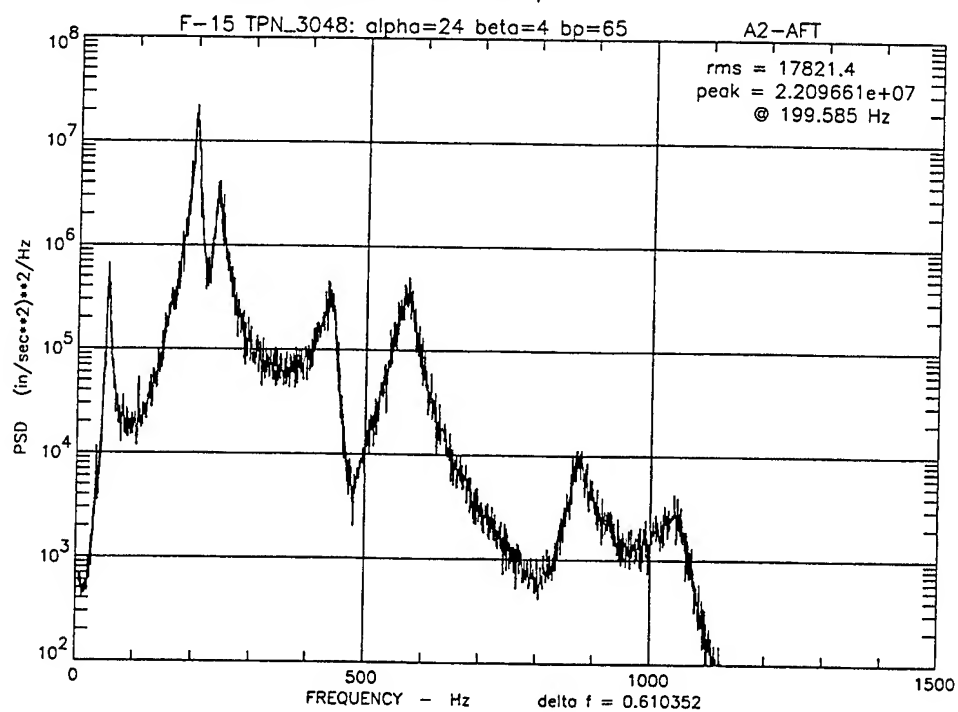
F-15 TPN\_3048: alpha=24 beta=4 bp=65



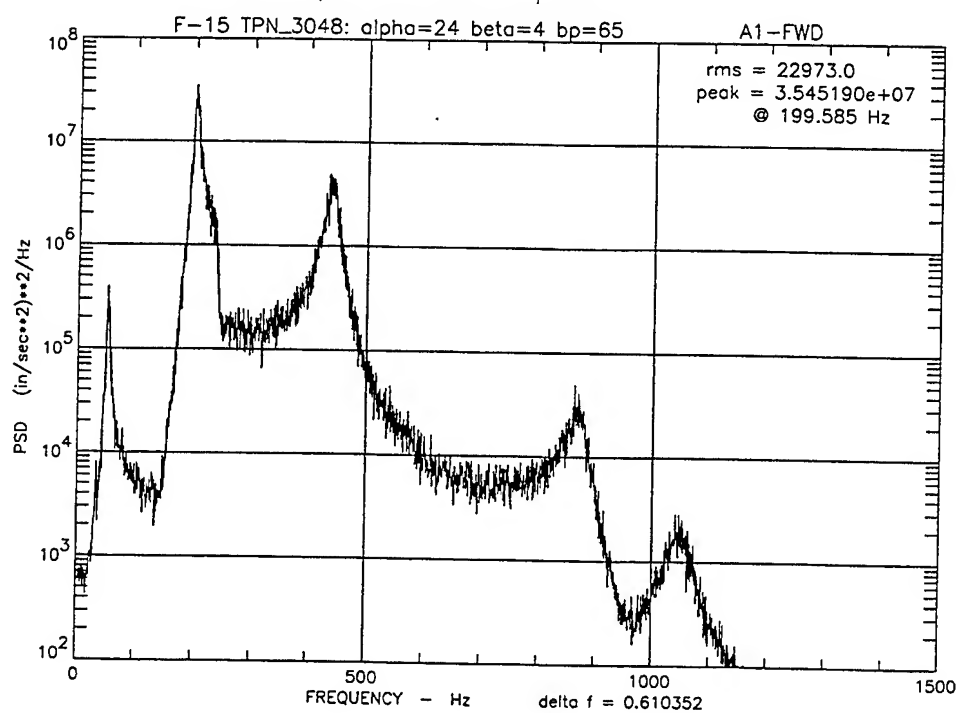
F-15 TPN\_3048: alpha=24 beta=4 bp=65



F-15 TPN\_3048: alpha=24 beta=4 bp=65



F-15 TPN\_3048: alpha=24 beta=4 bp=65



**FLEXIBLE TAIL RESPONSE  
ACCELERATION DATA**

**Q= 56 PSF**

**PSD GRAPHS**

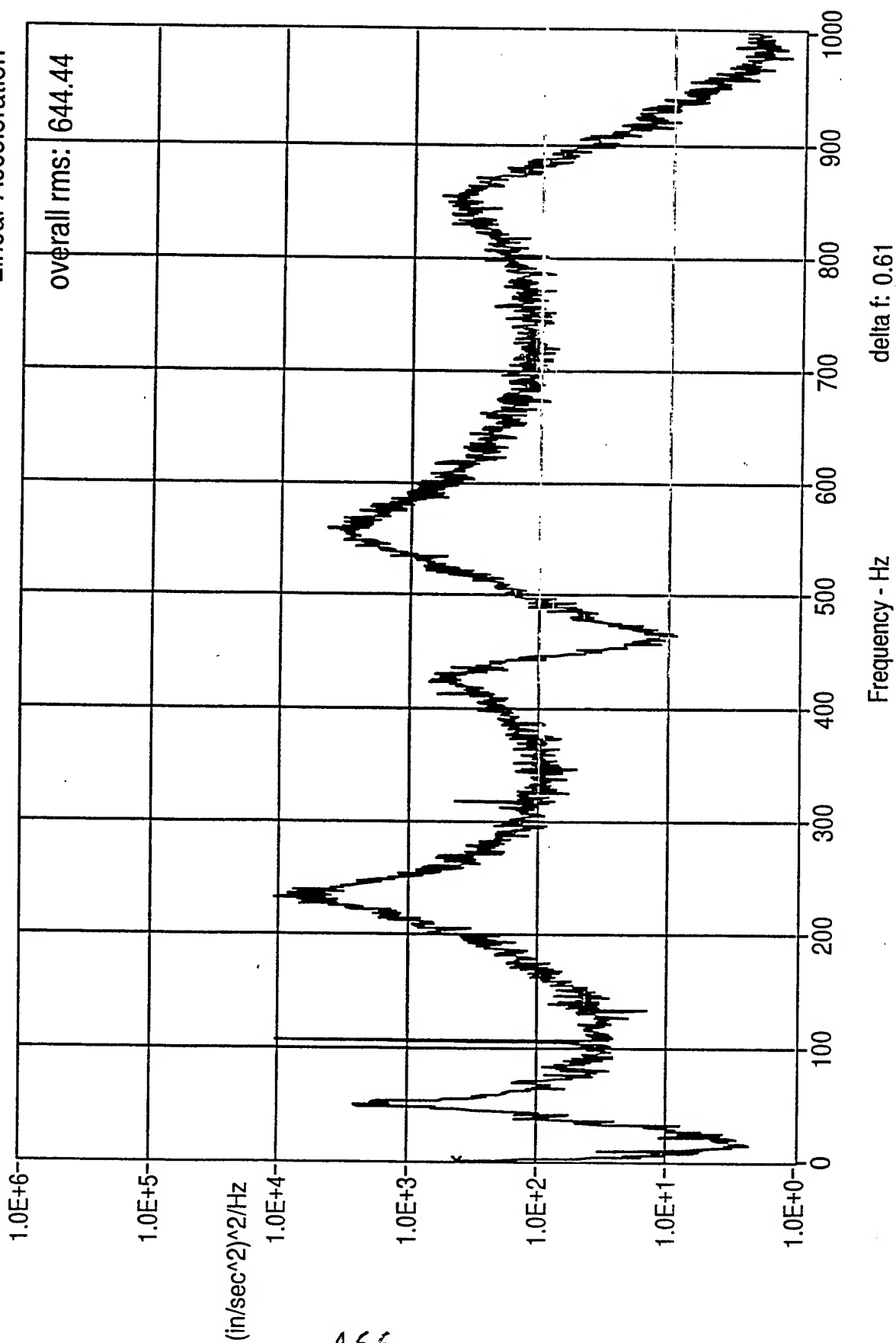
**4.1.1.2 BENDING(LINEAR AT EA) beta= 0, +4, -4 Deg, WBP = 0, 45, 65 psi**

**ALPHAS = 8, 20, 24, 32 DEG**

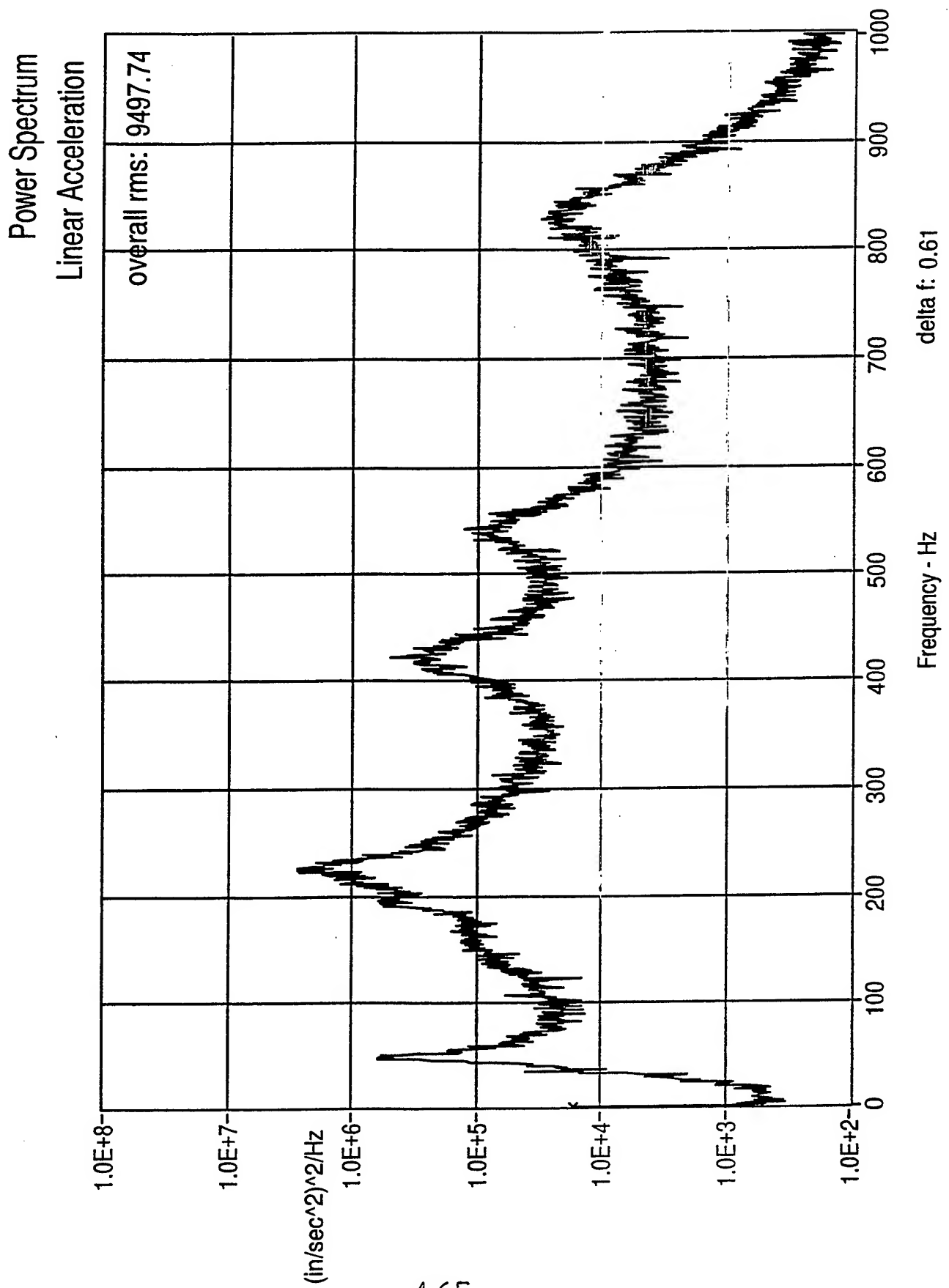
( note, the dimensional graph s, ( in/sec)<sup>2</sup>/hz are in a block, while the graphs  
( g's)<sup>2</sup>/hz are in a second block. data is further blocked off by blowing  
pressures, with beta variation within.

F-15 TPN\_2864: alpha=8 beta=-4 bp=0

Power Spectrum  
Linear Acceleration



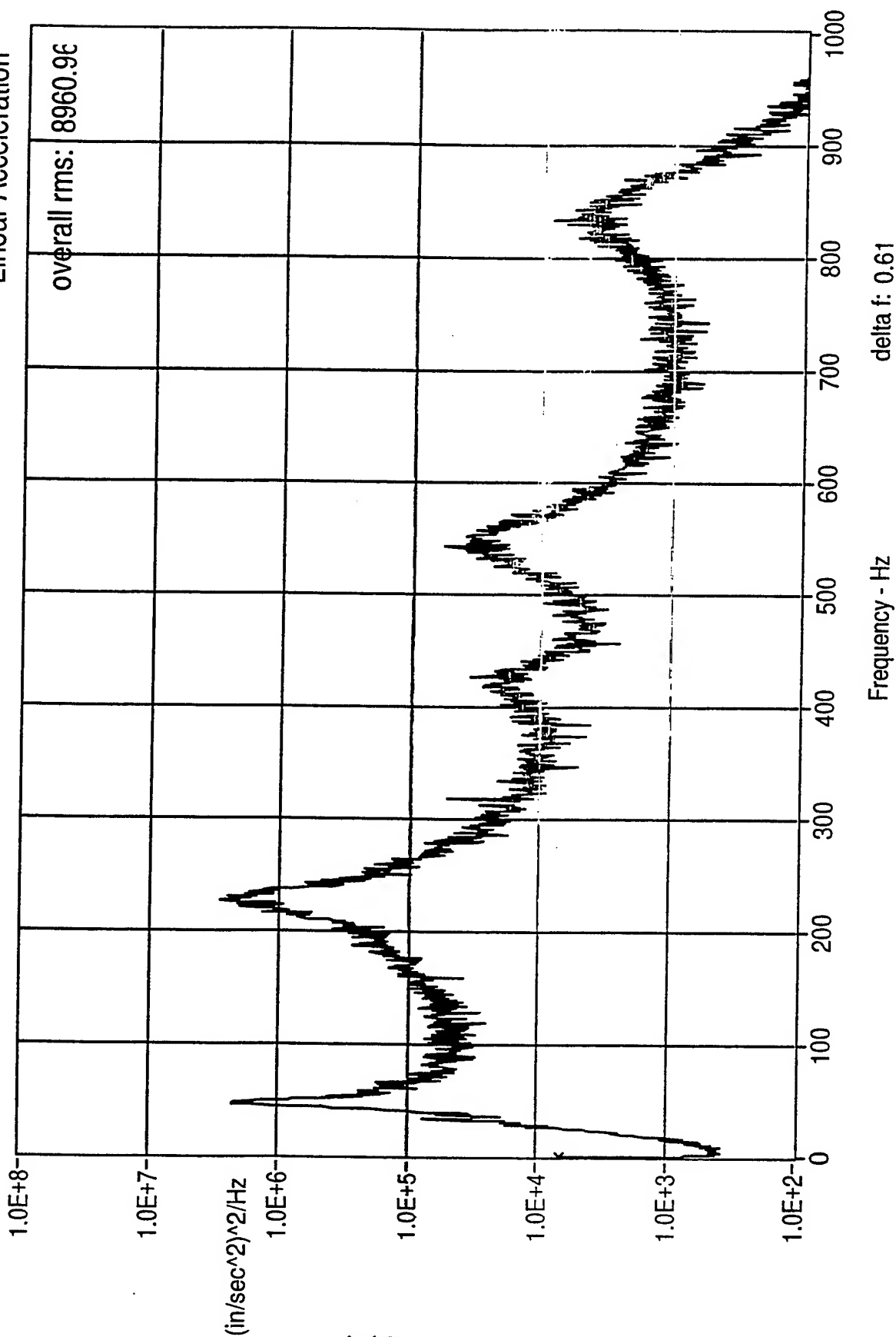
F-15 TPN\_2872: alpha=24 beta=-4 bp=0





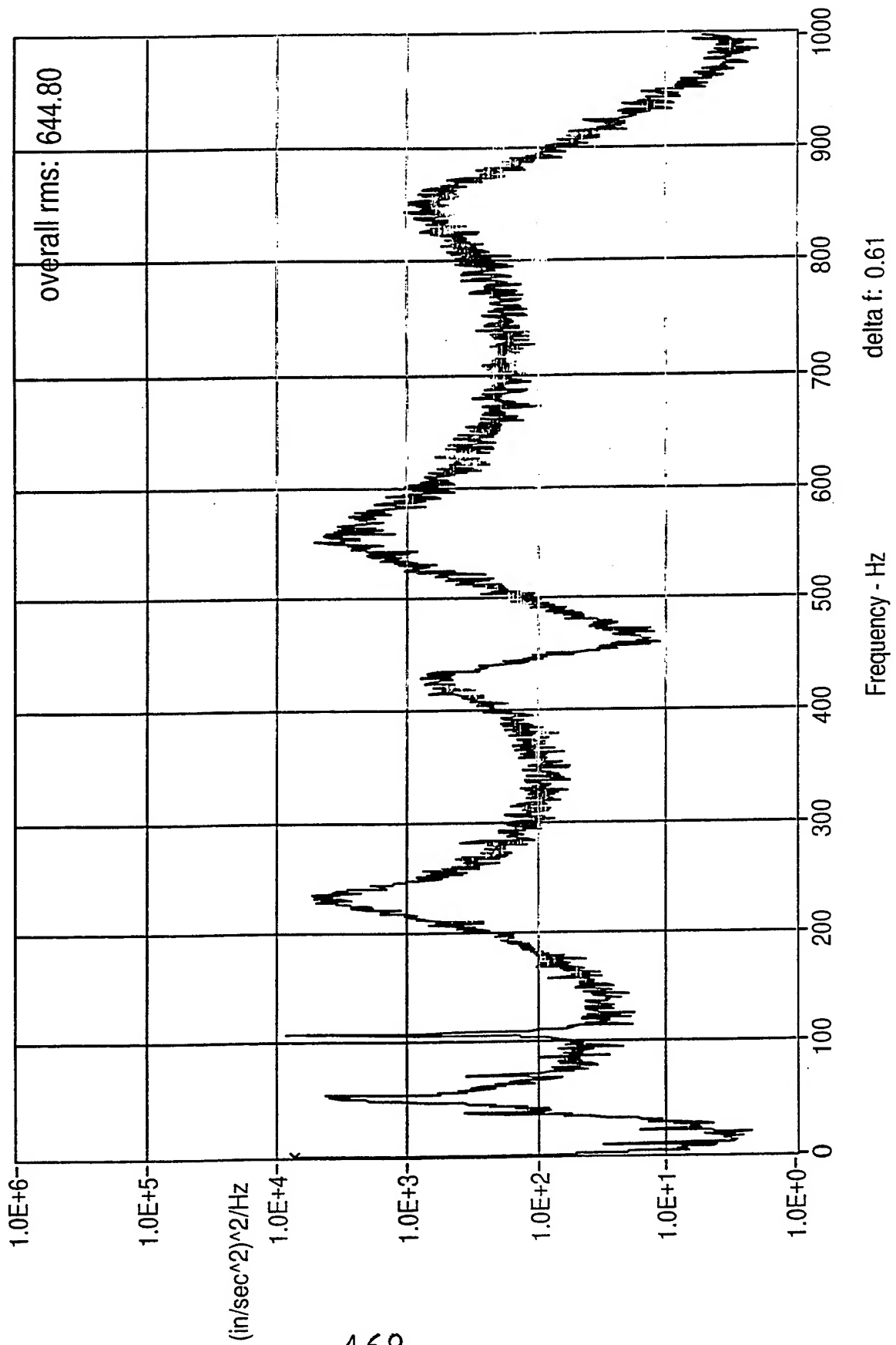
F-15 TPN\_2874: alpha=32 beta=-4 bp=0

Power Spectrum  
Linear Acceleration



F-15 TPN\_2844: alpha=8 beta=0 bp=0

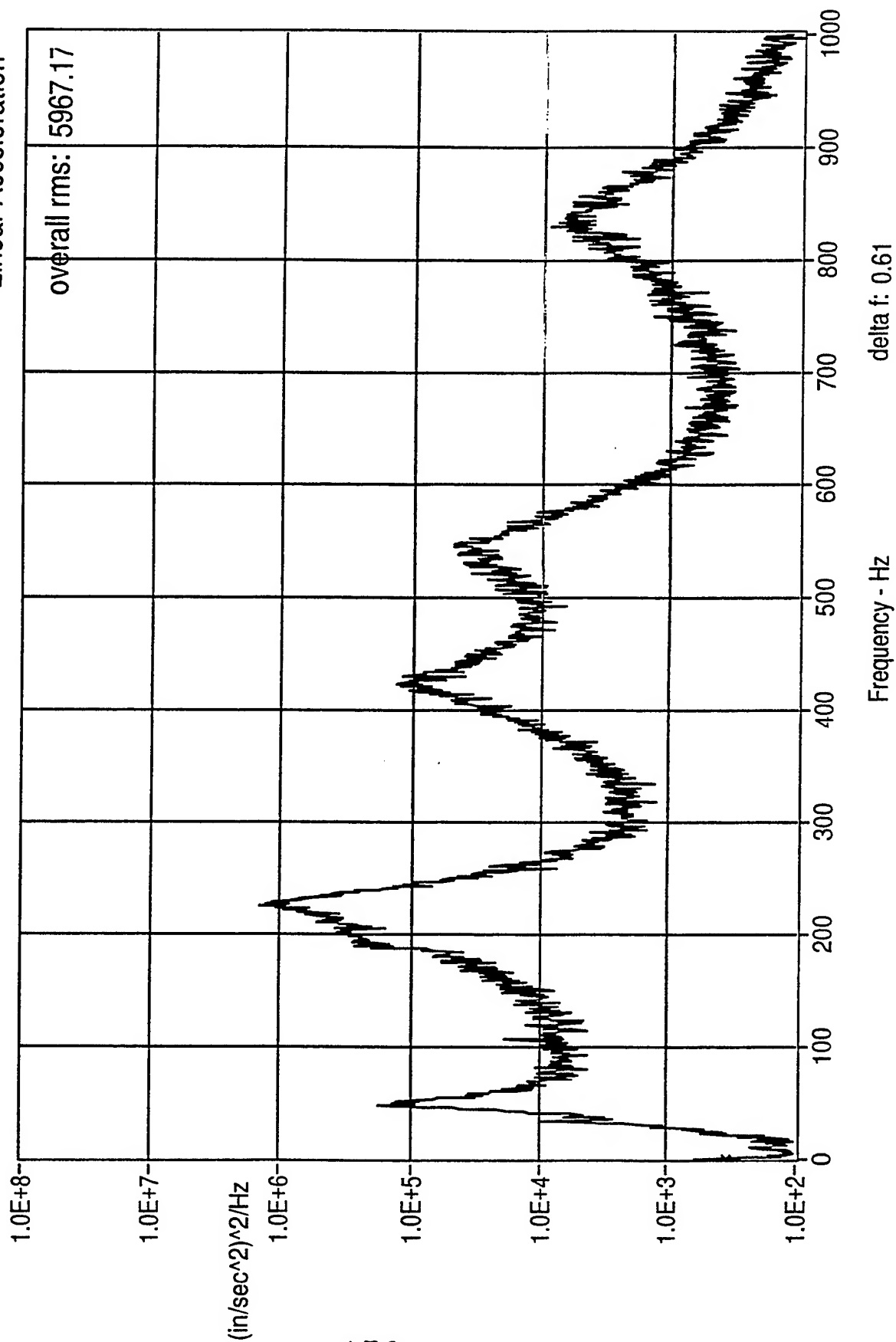
Power Spectrum  
Linear Acceleration



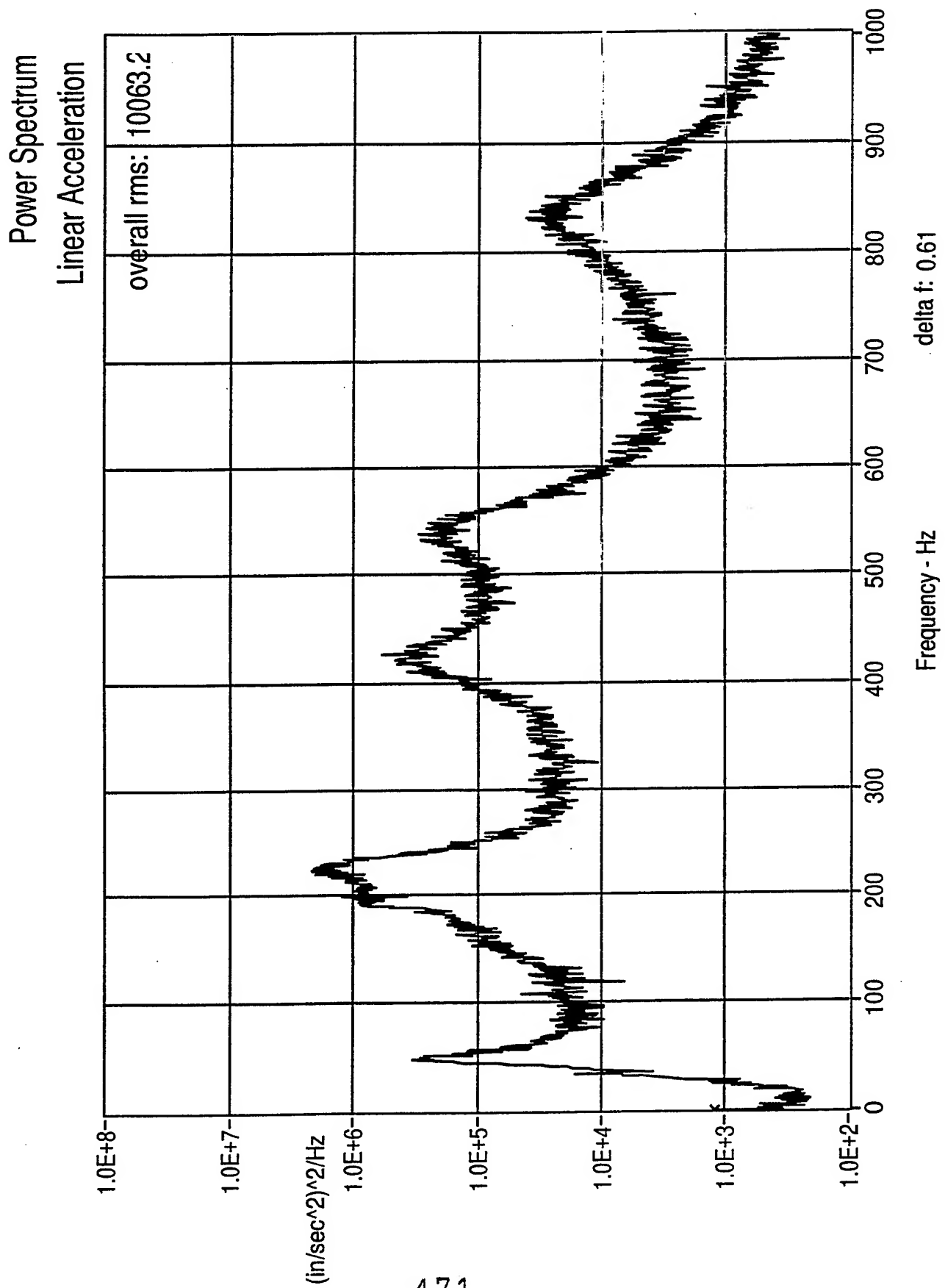
F-15 TPN\_2850: alpha=20 beta=0 bp=0

Power Spectrum

Linear Acceleration

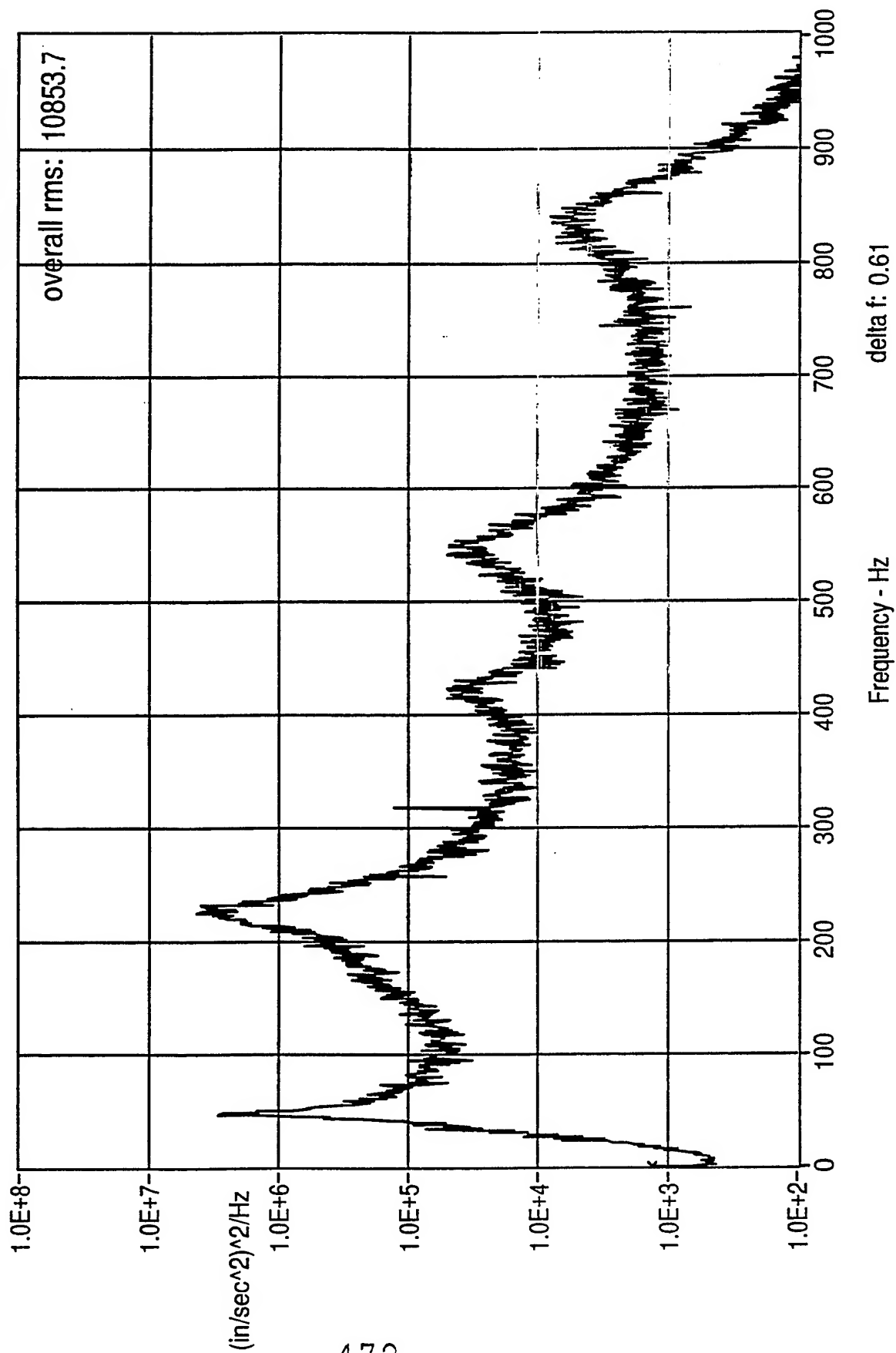


F-15 TPN\_2852: alpha=24 beta=0 bp=0

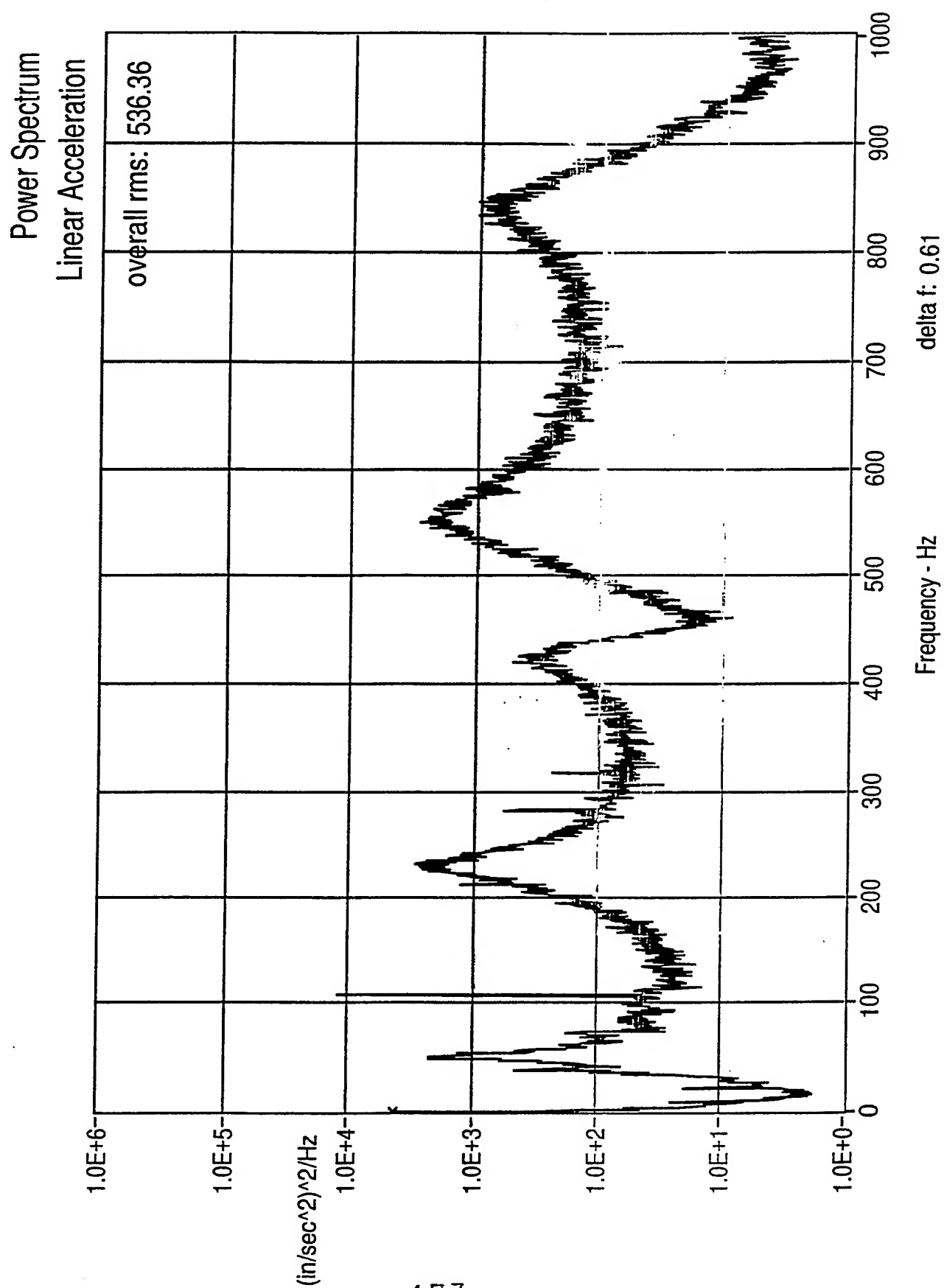


F-15 TPN\_2854: alpha=32 beta=0 bp=0

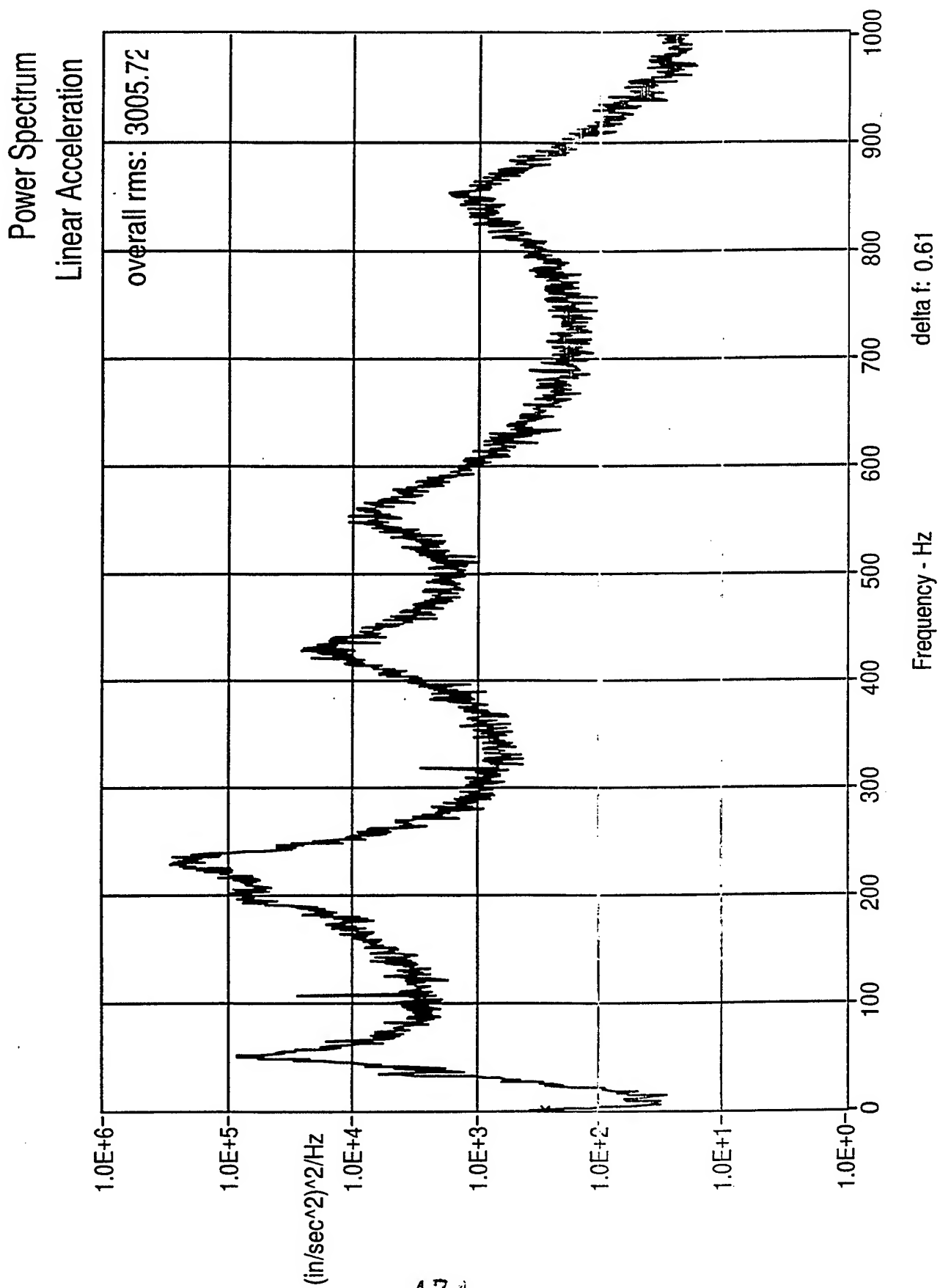
Power Spectrum  
Linear Acceleration



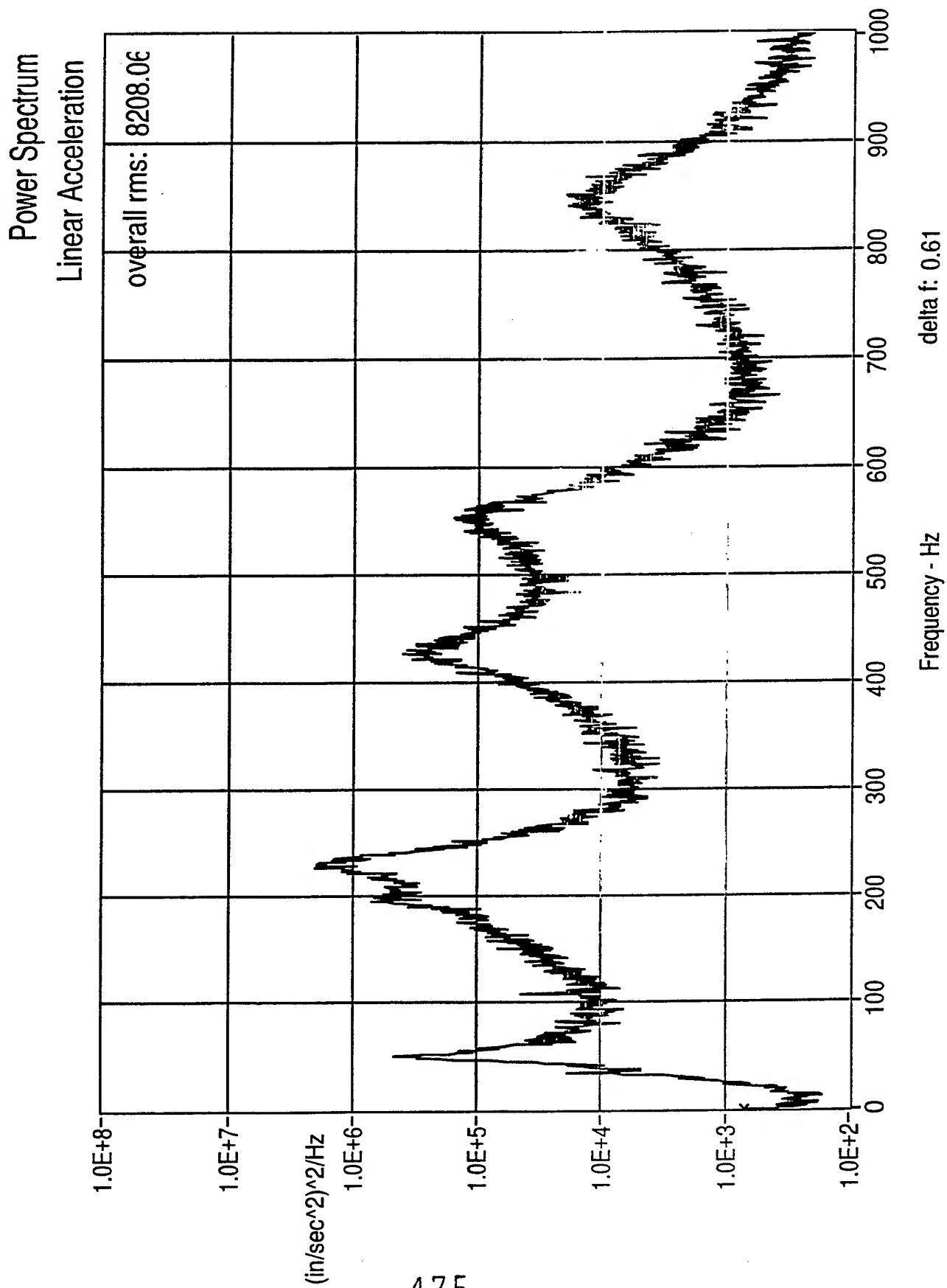
F-15 TPN\_2918: alpha=8 beta=4 bp=0



F-15 TPN\_2924: alpha=20 beta=4 bp=0



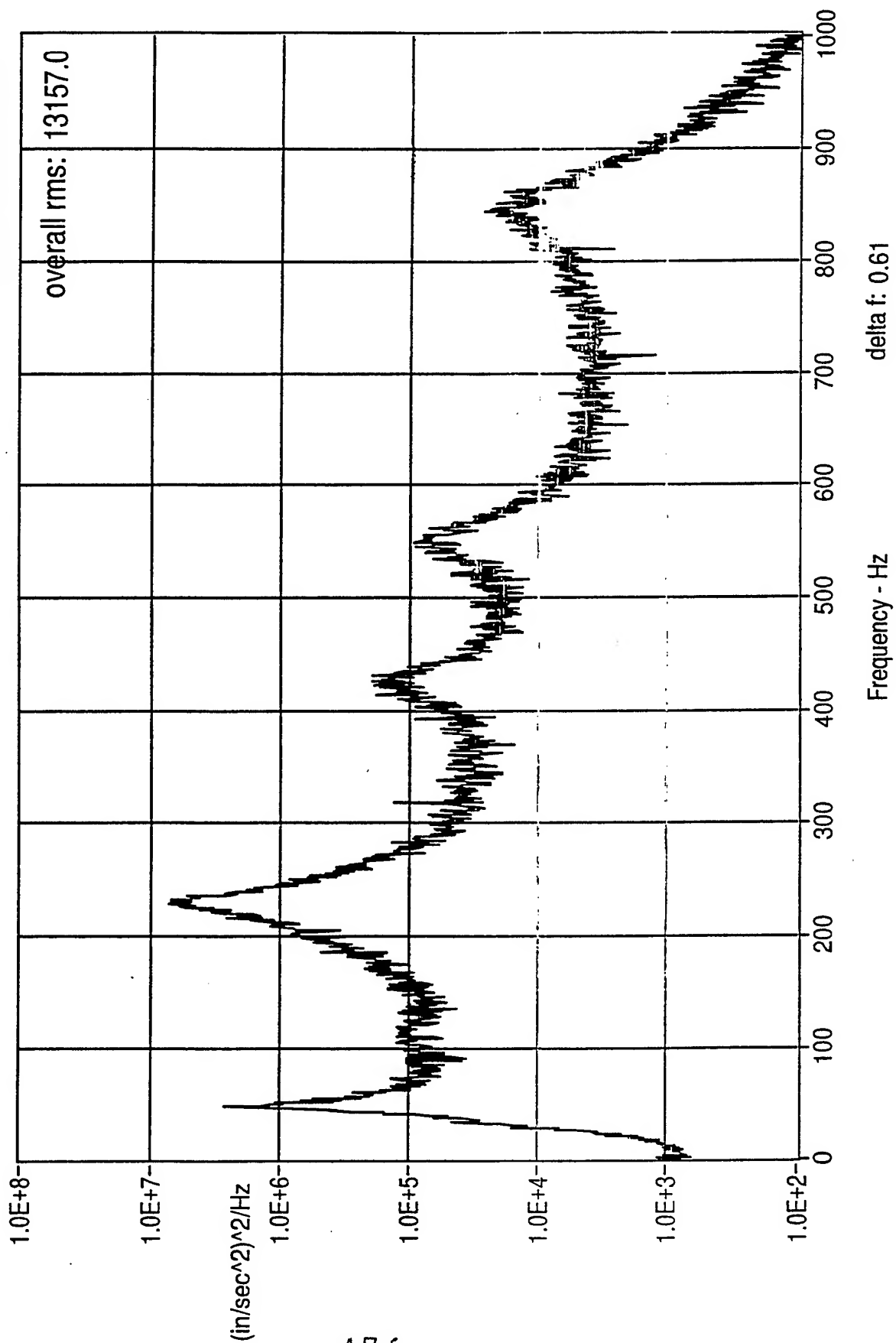
F-15 TPN\_2926: alpha=24 beta=4 bp=0





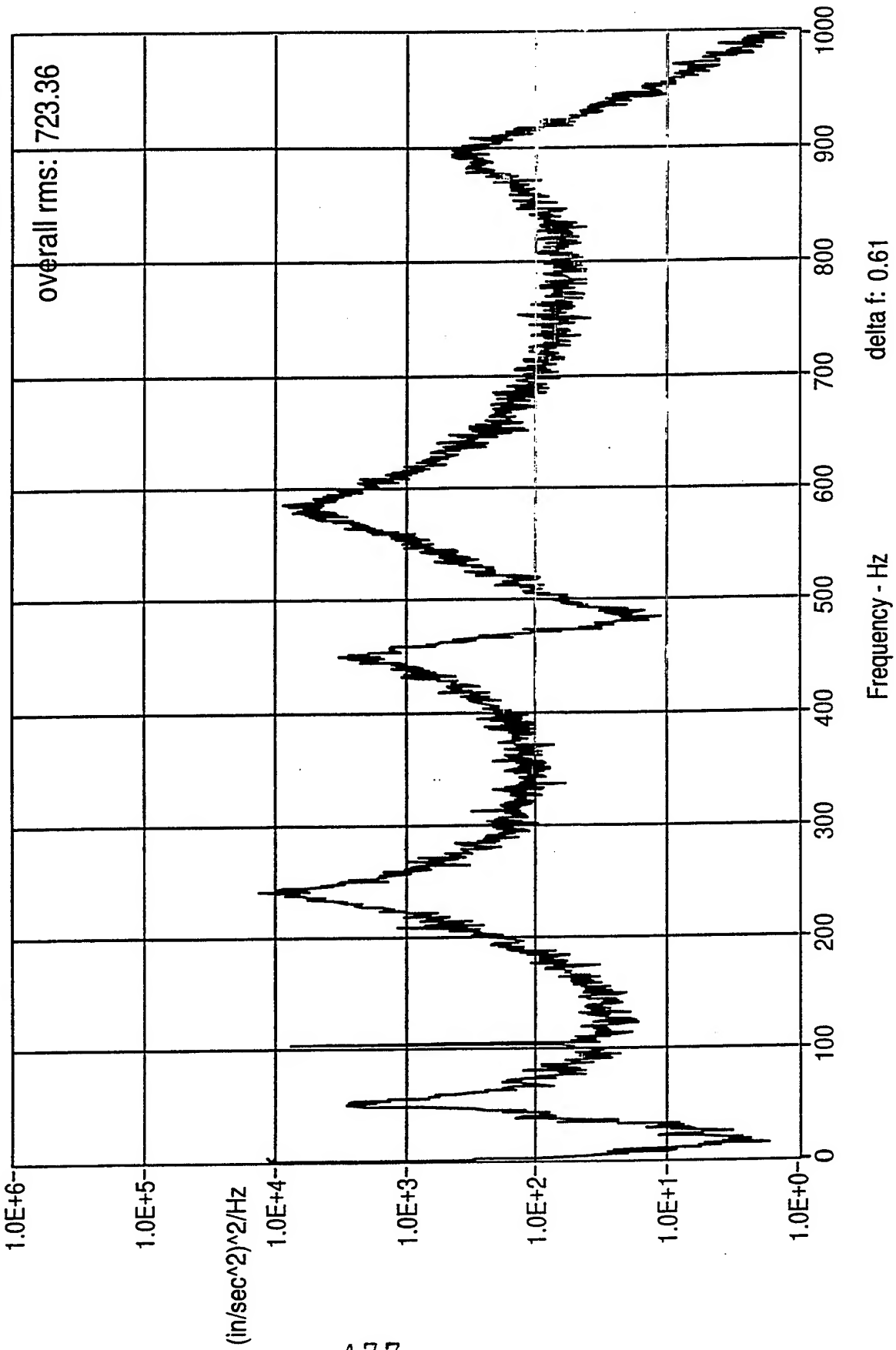
F-15 TPN\_2928: alpha=32 beta=4 bp=0

Power Spectrum  
Linear Acceleration



F-15 TPN\_3369: alpha=8 beta=-4 bp=45

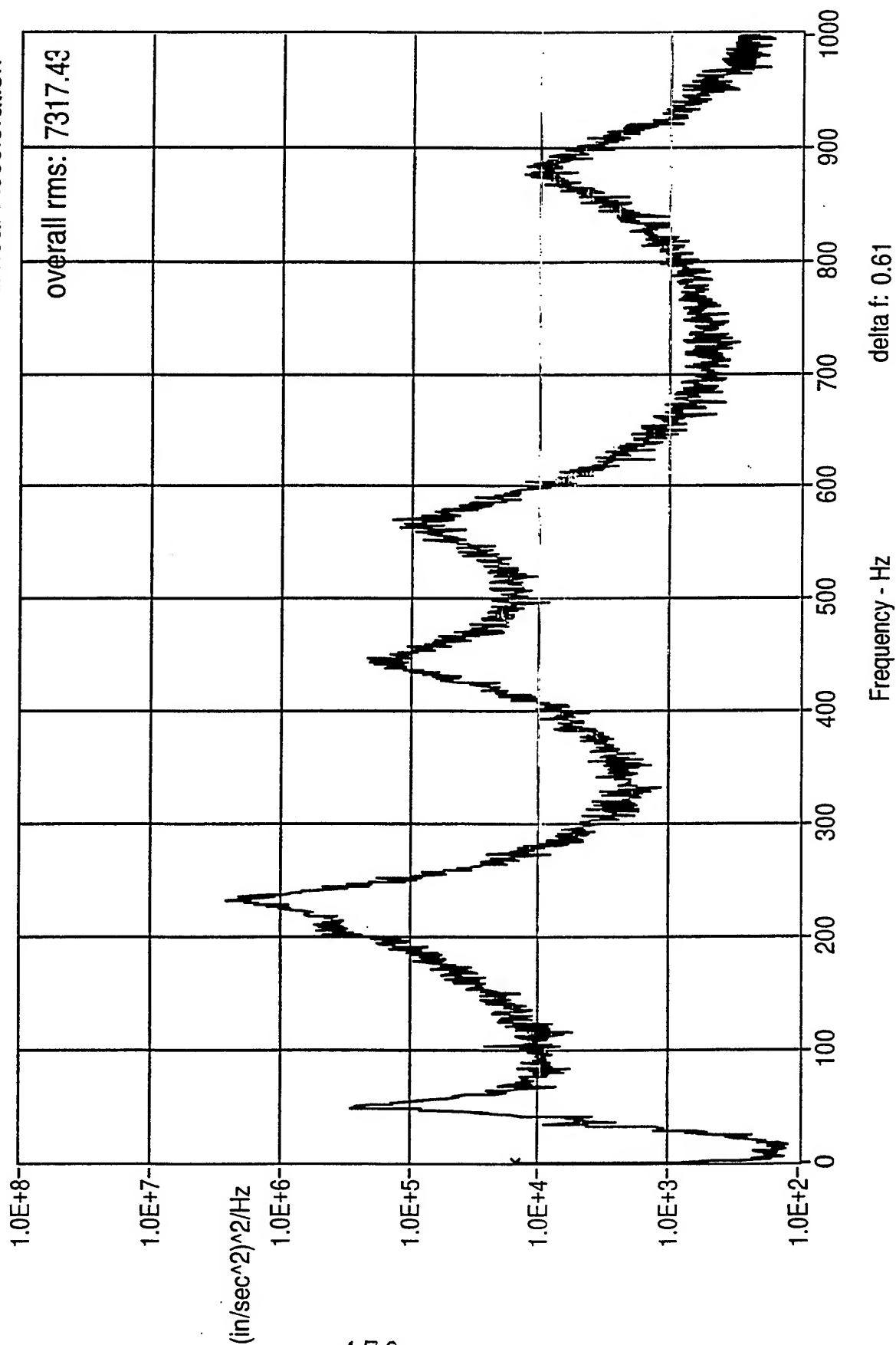
Power Spectrum  
Linear Acceleration



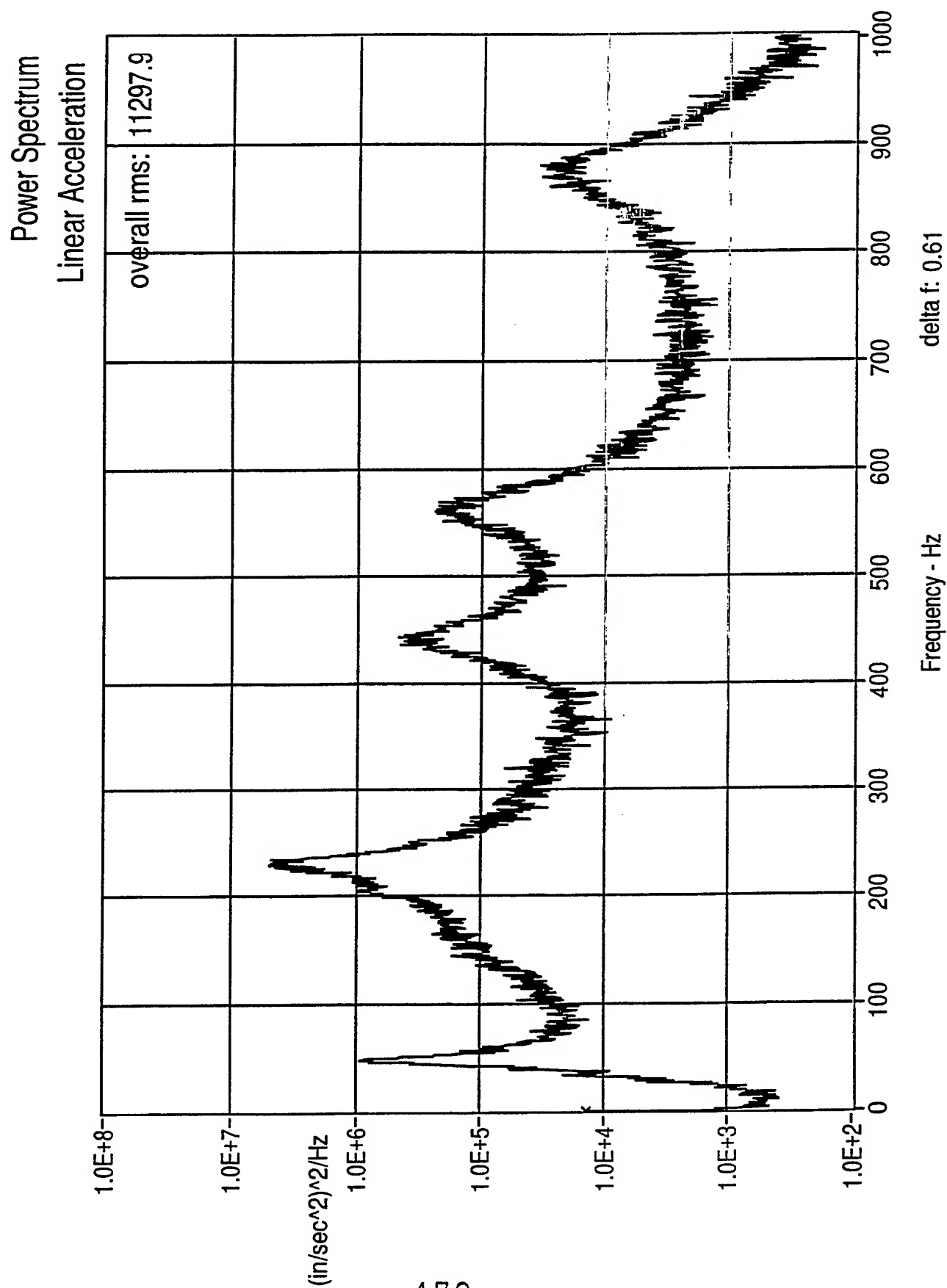
F-15 TPN\_3375: alpha=20 beta=-4 bp=45

Power Spectrum

Linear Acceleration

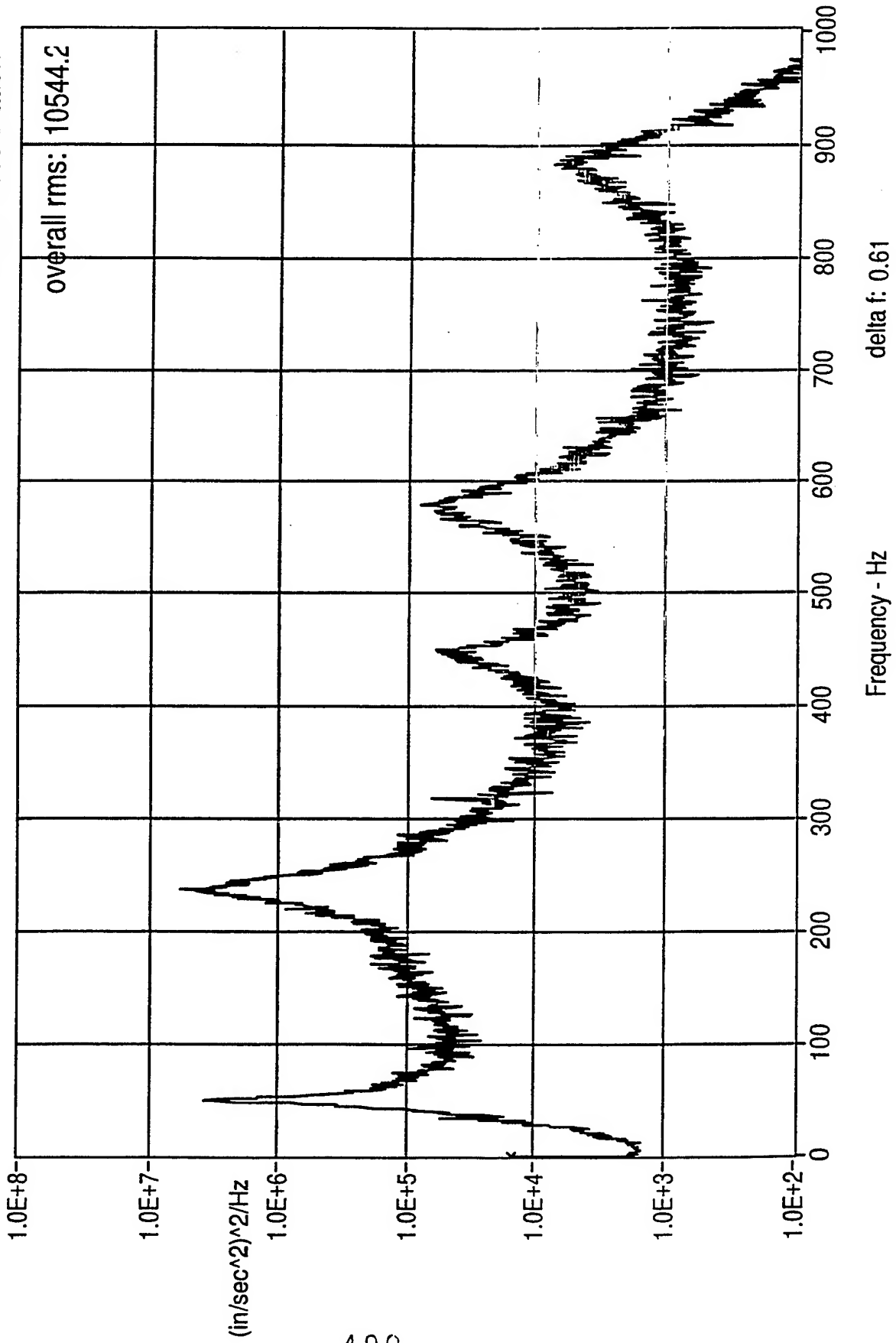


F-15 TPN\_3377: alpha=24 beta=-4 bp=45

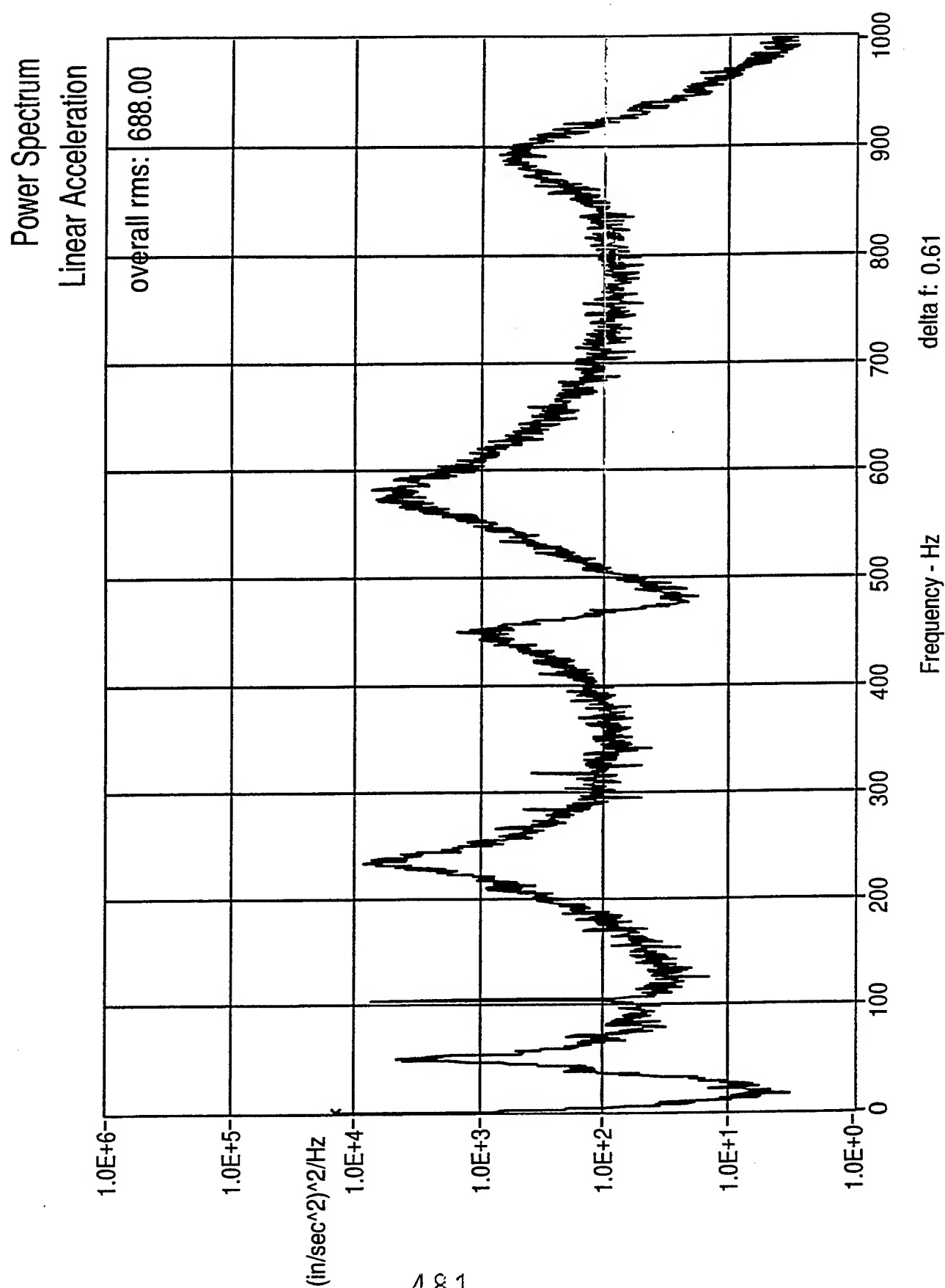


F-15 TPN\_3379: alpha=32 beta=-4 bp=45

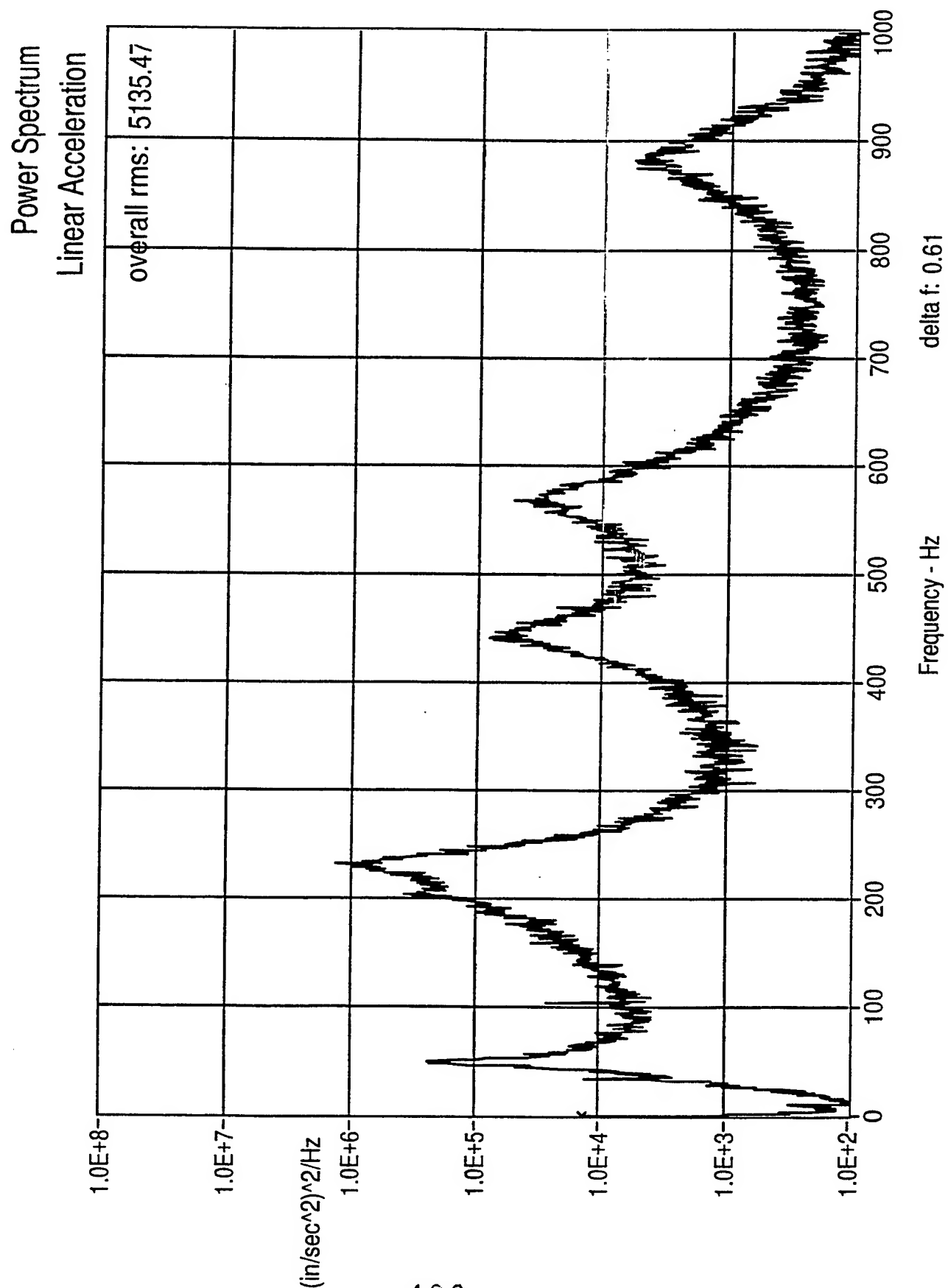
Power Spectrum  
Linear Acceleration



F-15 TPN\_3333: alpha=8 beta=0 bp=45

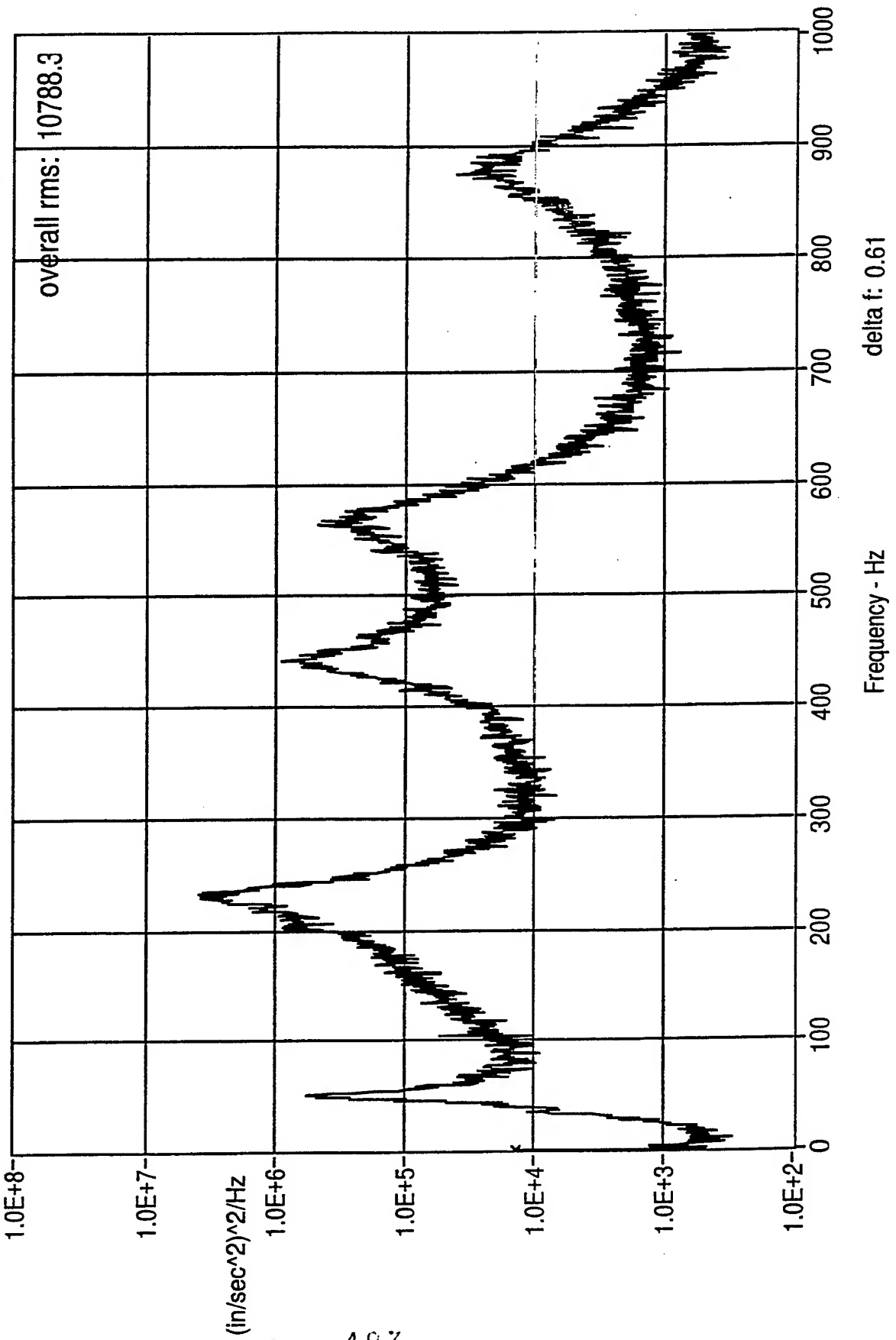


F-15 TPN\_3339: alpha=20 beta=0 bp=45



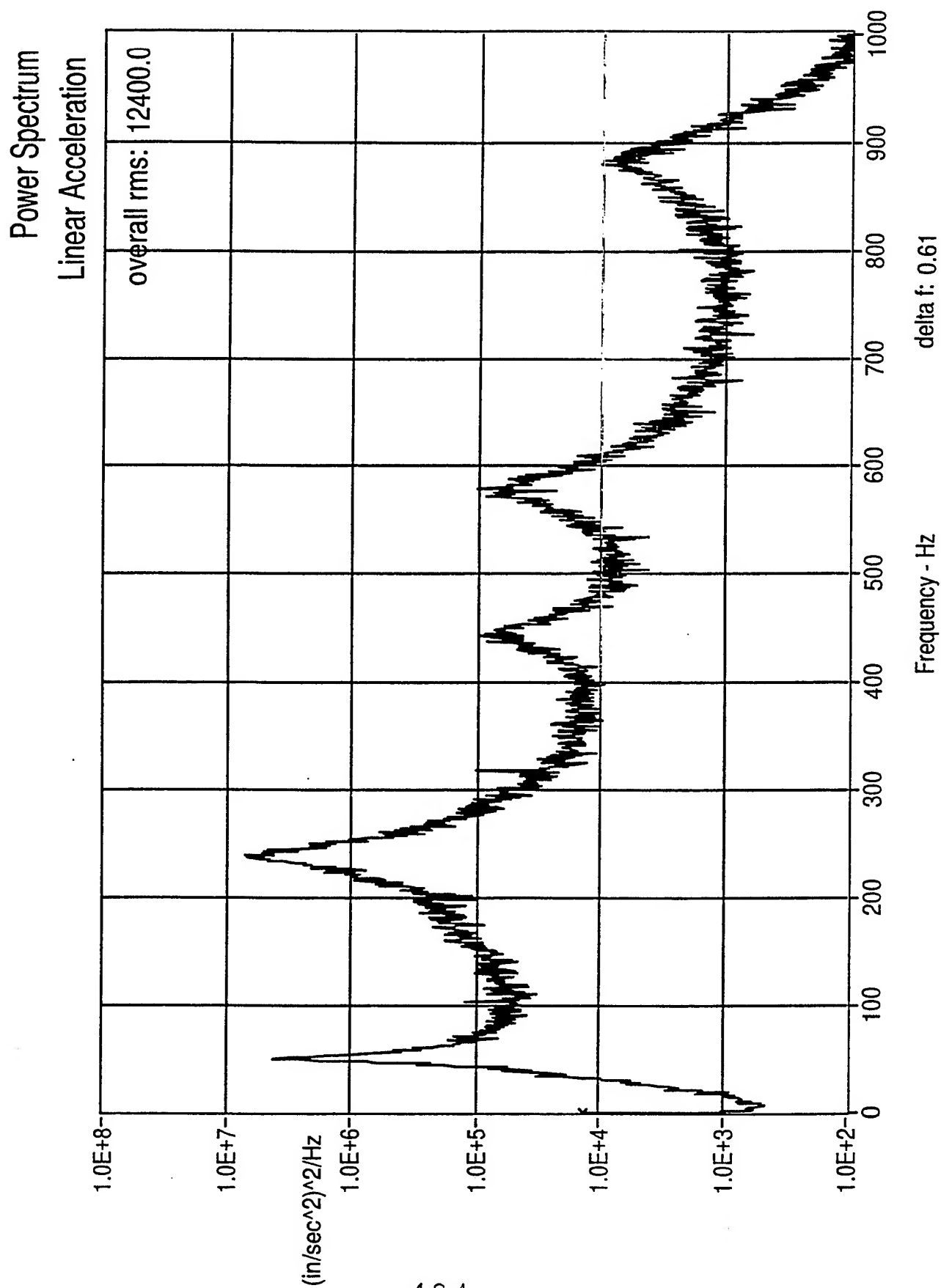
F-15 TPN\_3341: alpha=24 beta=0 bp=45

Power Spectrum  
Linear Acceleration

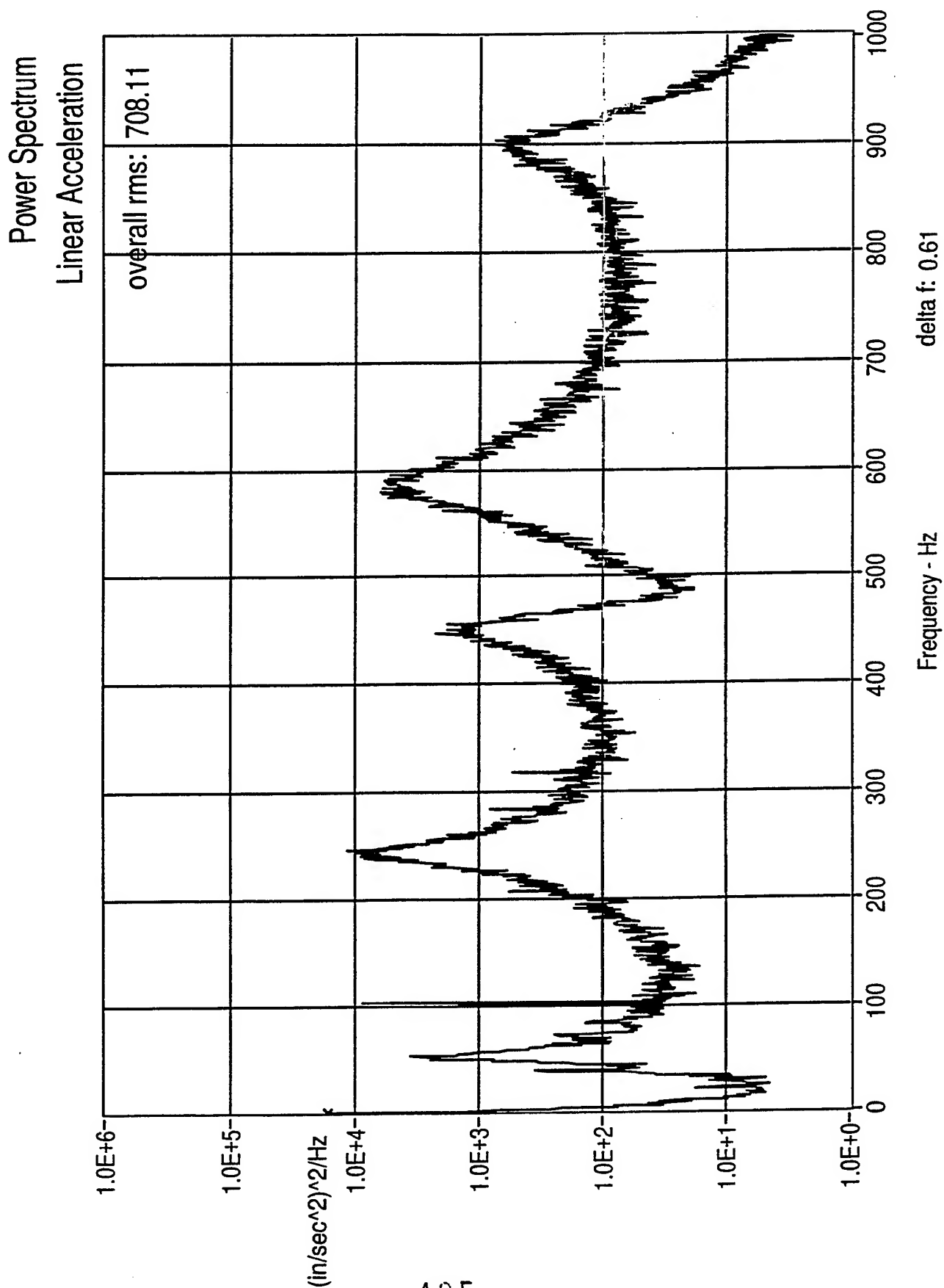




F-15 TPN\_3343: alpha=32 beta=0 bp=45

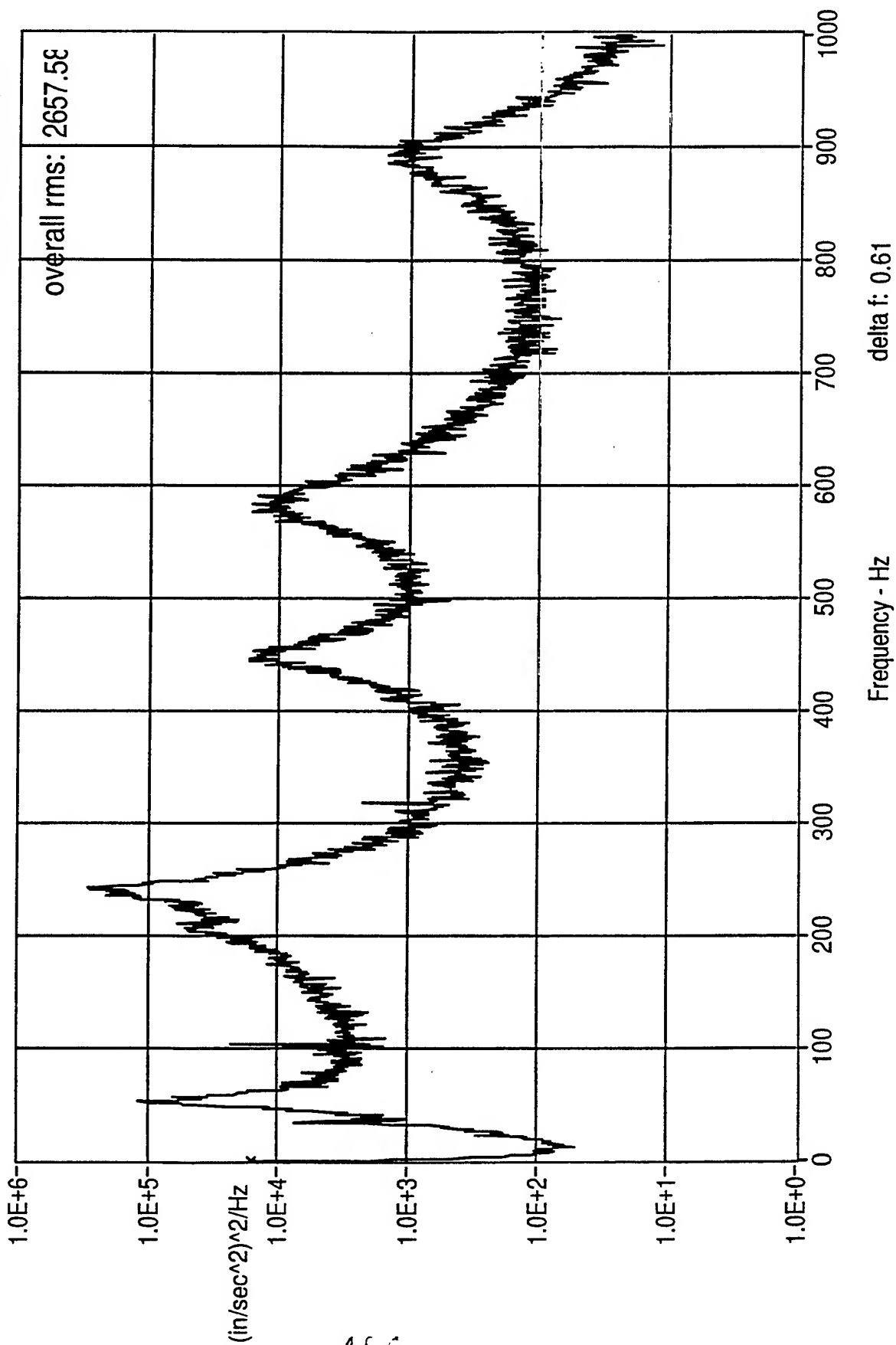


F-15 TPN\_3351: alpha=8 beta=4 bp=45

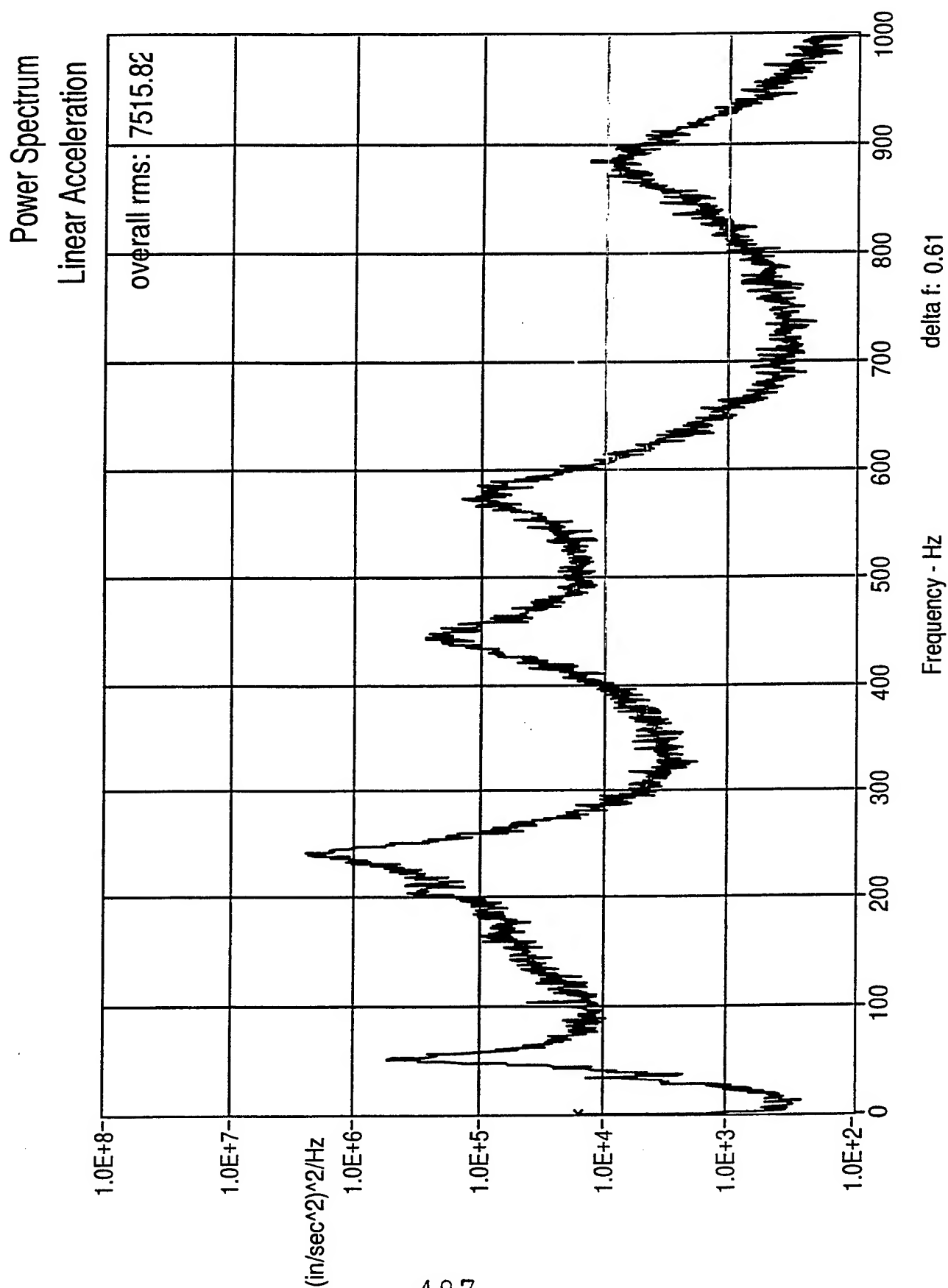


F-15 TPN\_3357: alpha=20 beta=4 bp=45

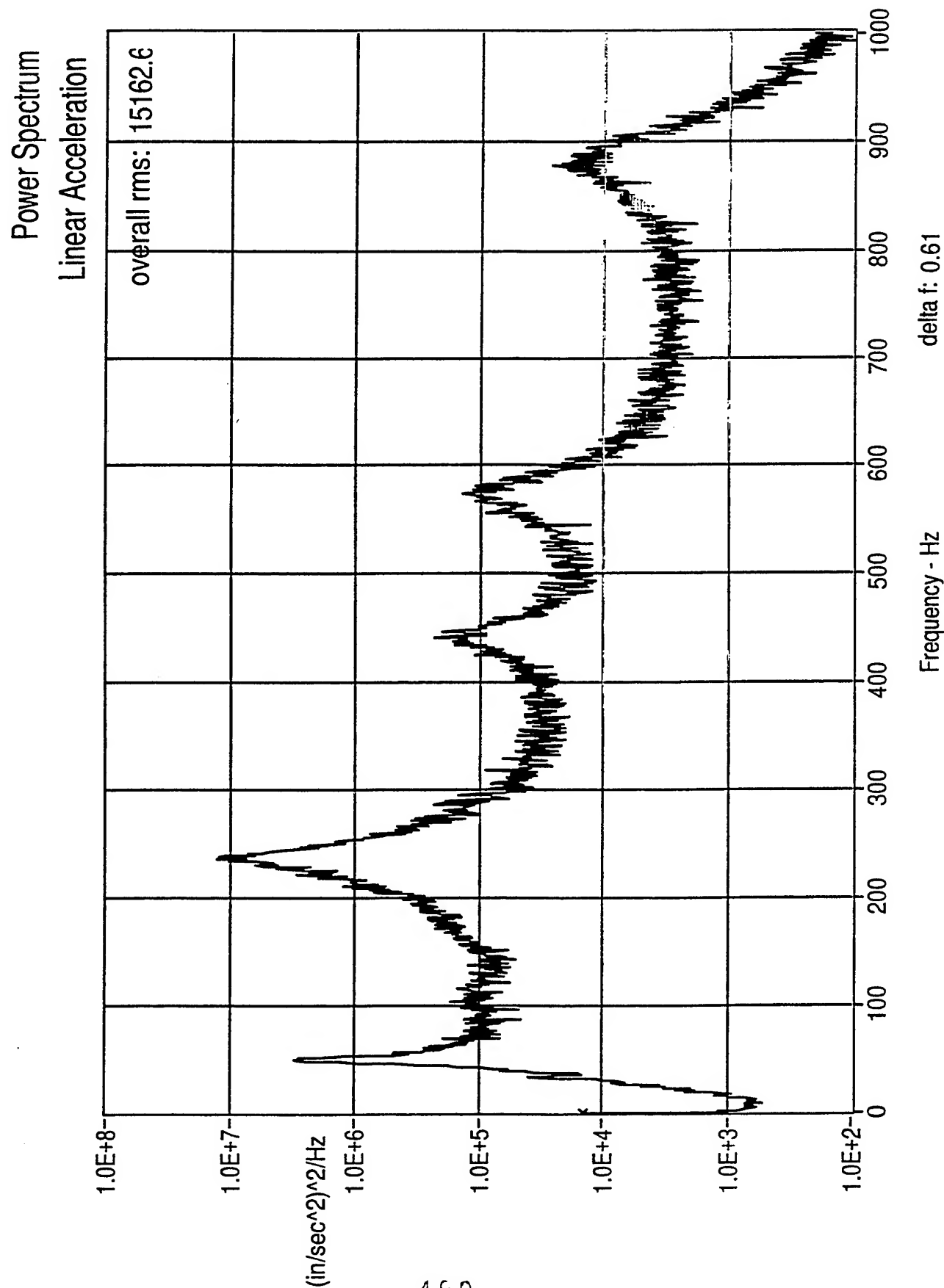
Power Spectrum  
Linear Acceleration



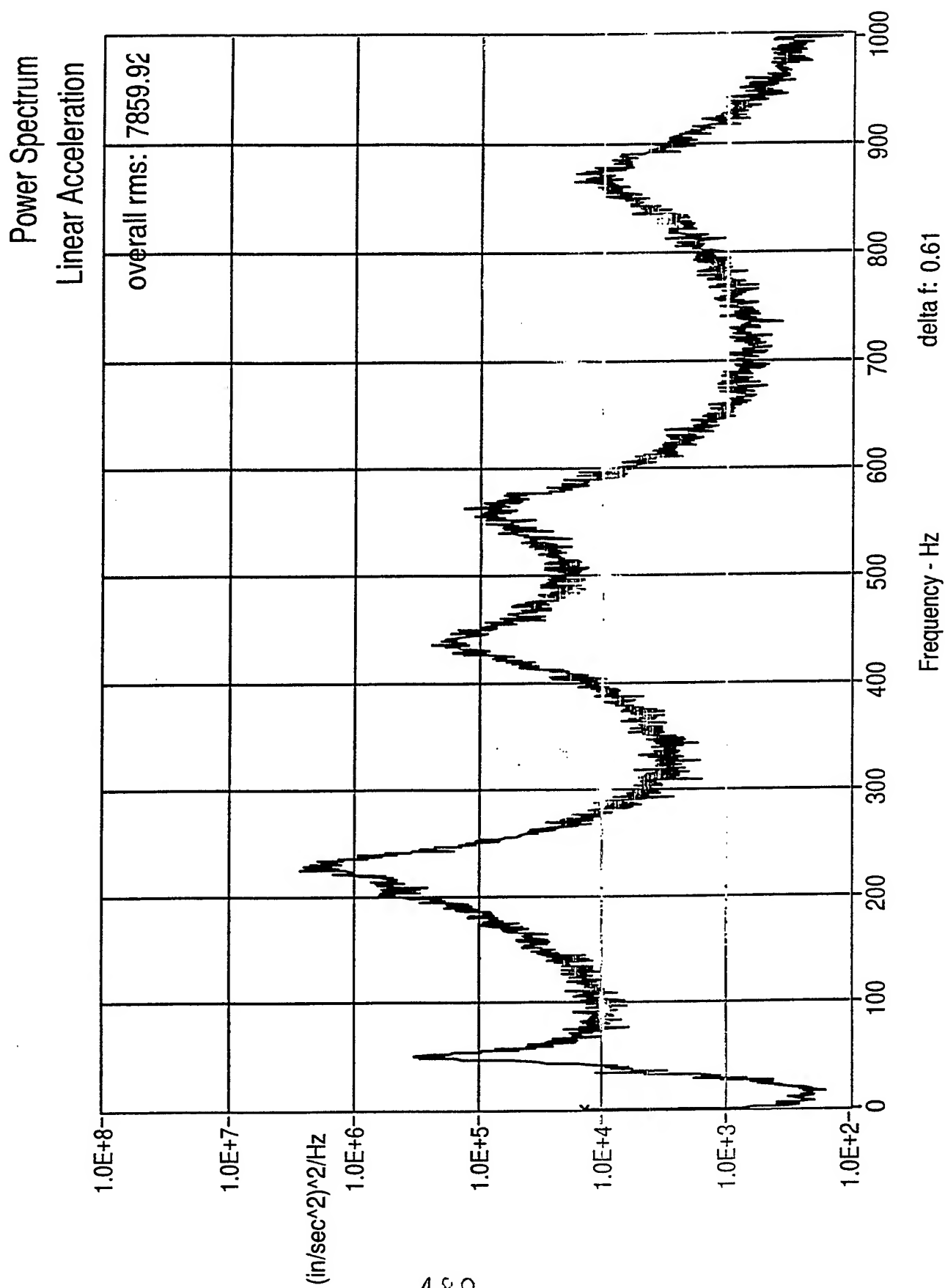
F-15 TPN\_3359: alpha=24 beta=4 bp=45



F-15 TPN\_3361: alpha=32 beta=4 bp=45

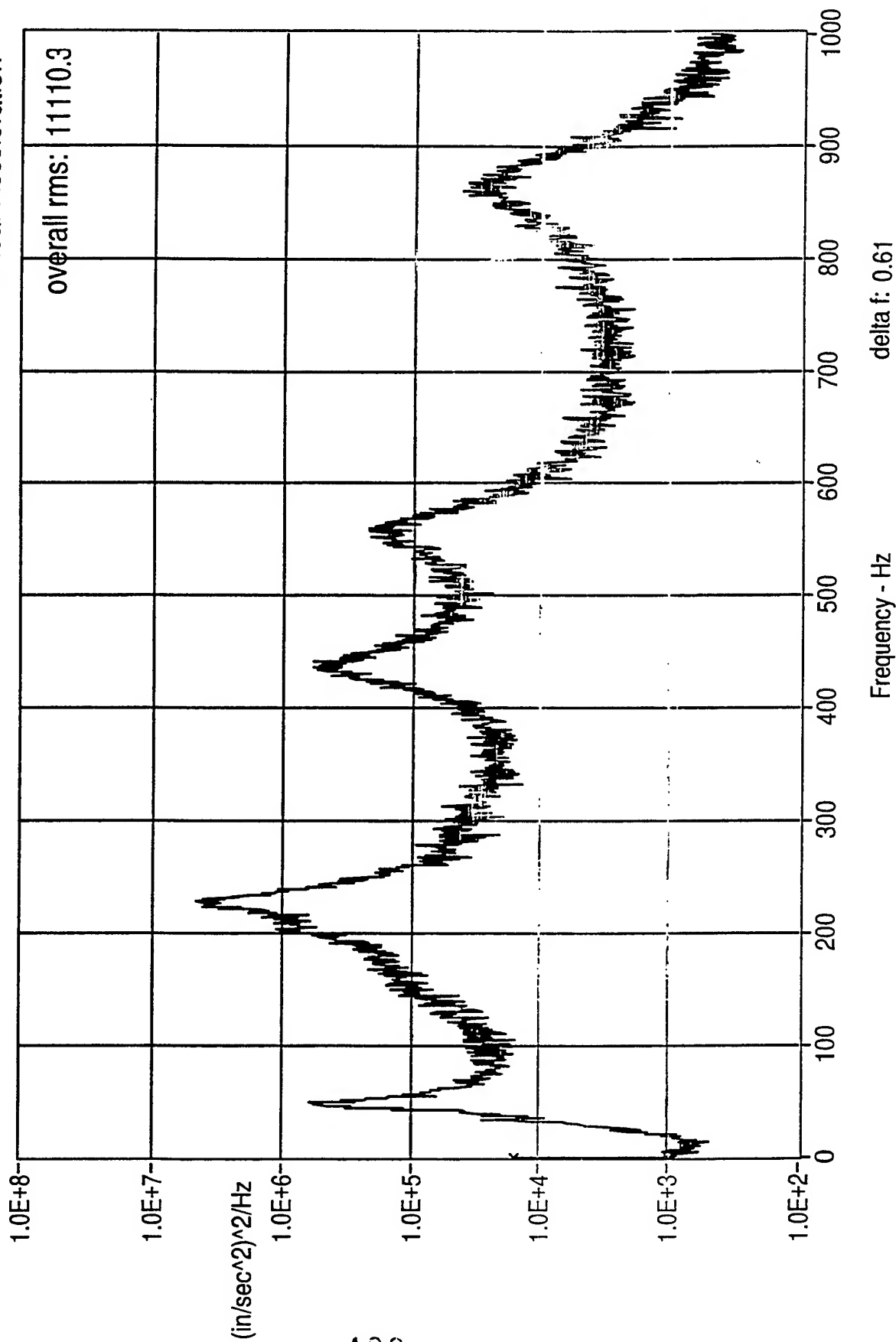


F-15 TPN\_3034: alpha=20 beta=-4 bp=65



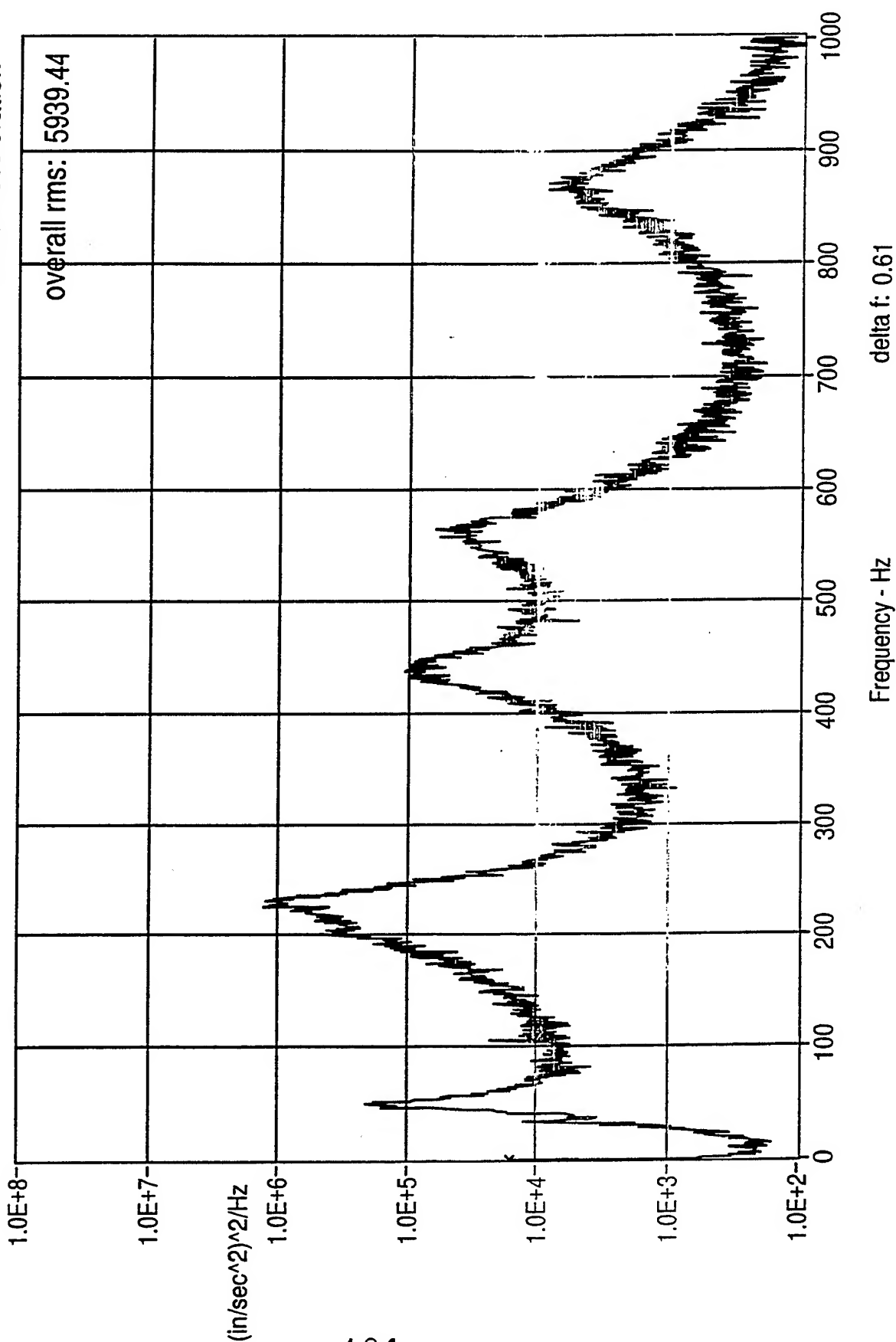
F-15 TPN\_3036: alpha=24 beta=-4 bp=65

Power Spectrum  
Linear Acceleration



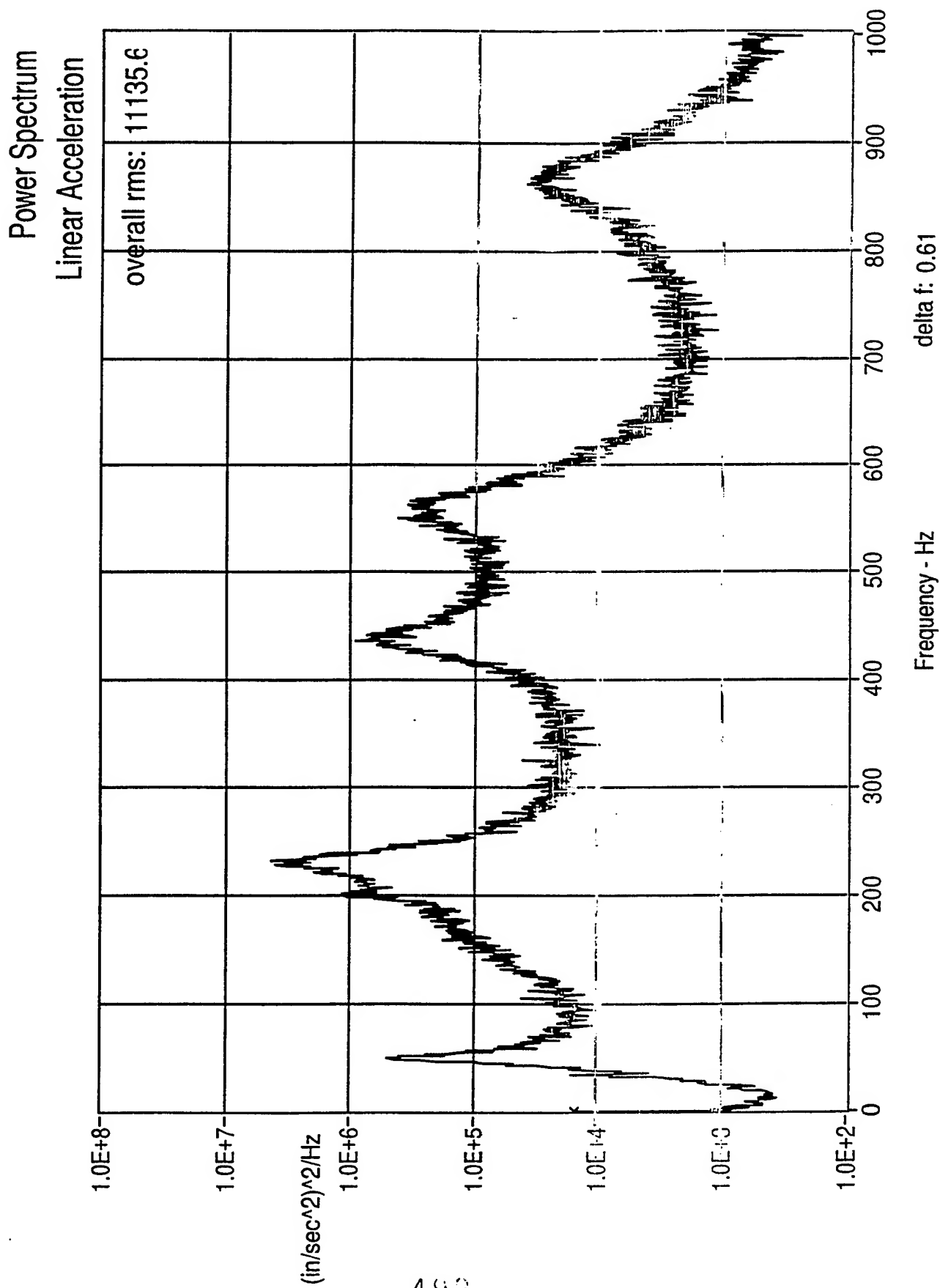
F-15 TPN\_3040: alpha=20 beta=0 bp=65

Power Spectrum  
Linear Acceleration

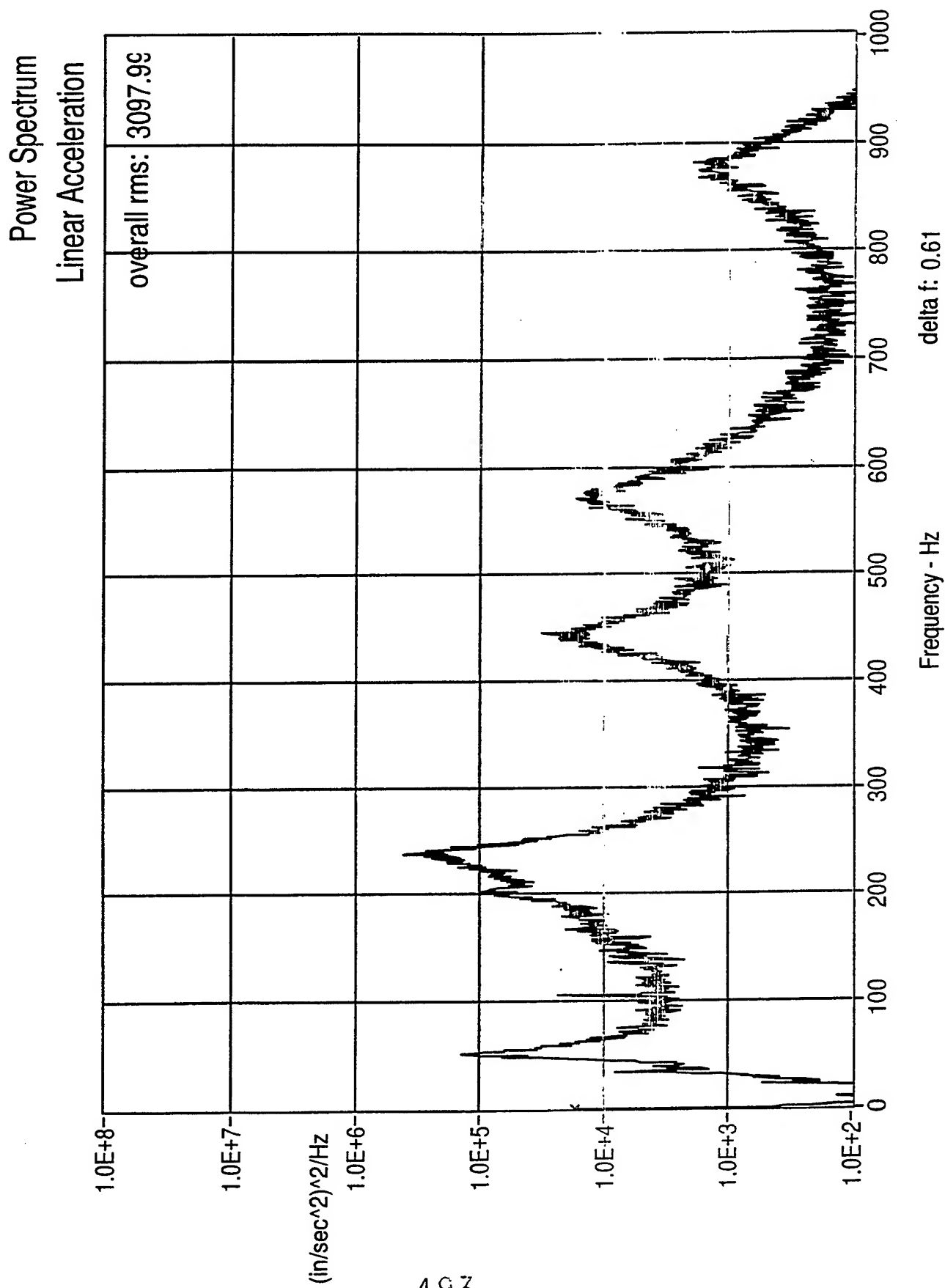




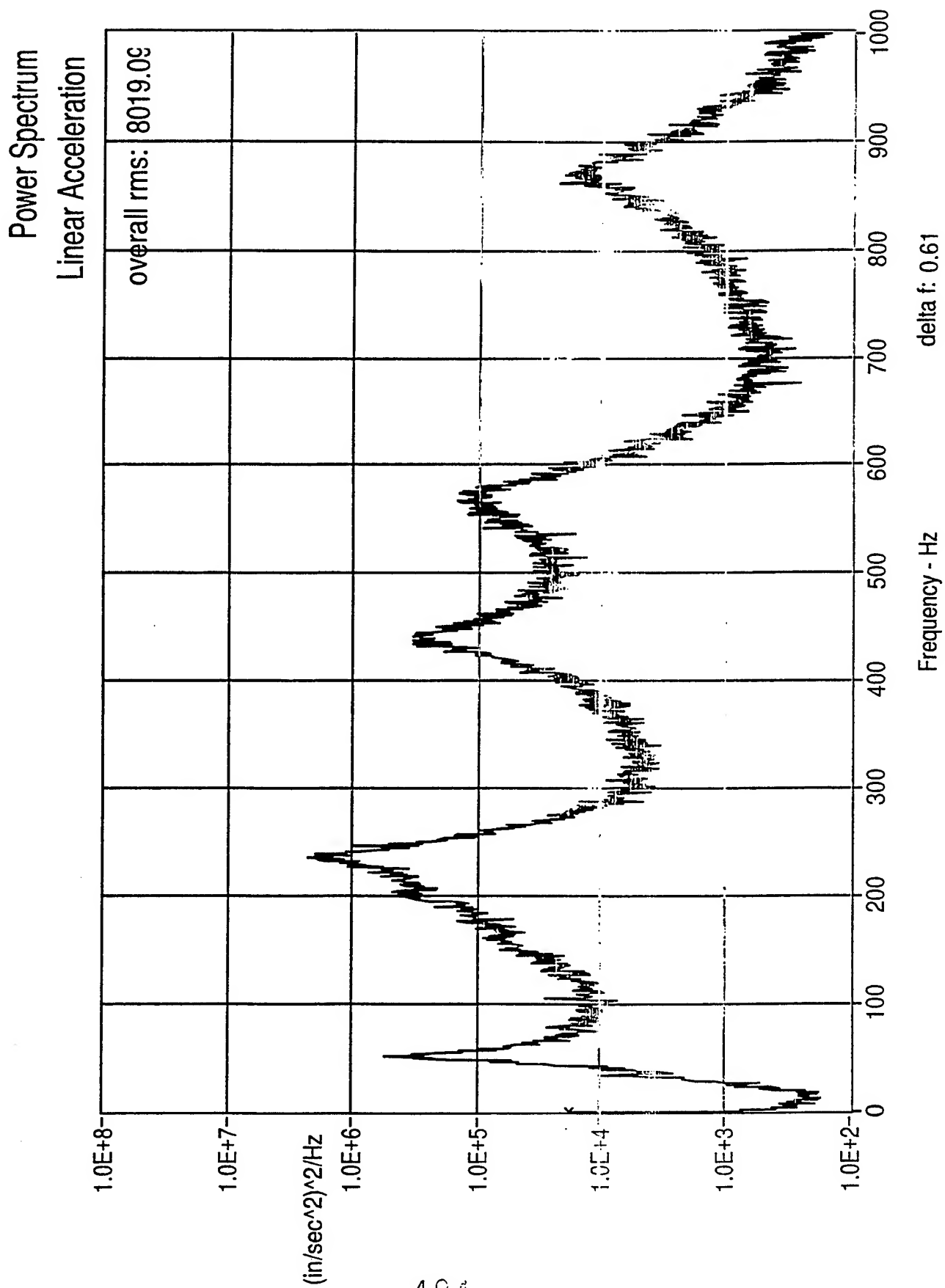
F-15 TPN\_3042: alpha=24 beta=0 bp=65



F-15 TPN\_3046: alpha=20 beta=4 bp=65

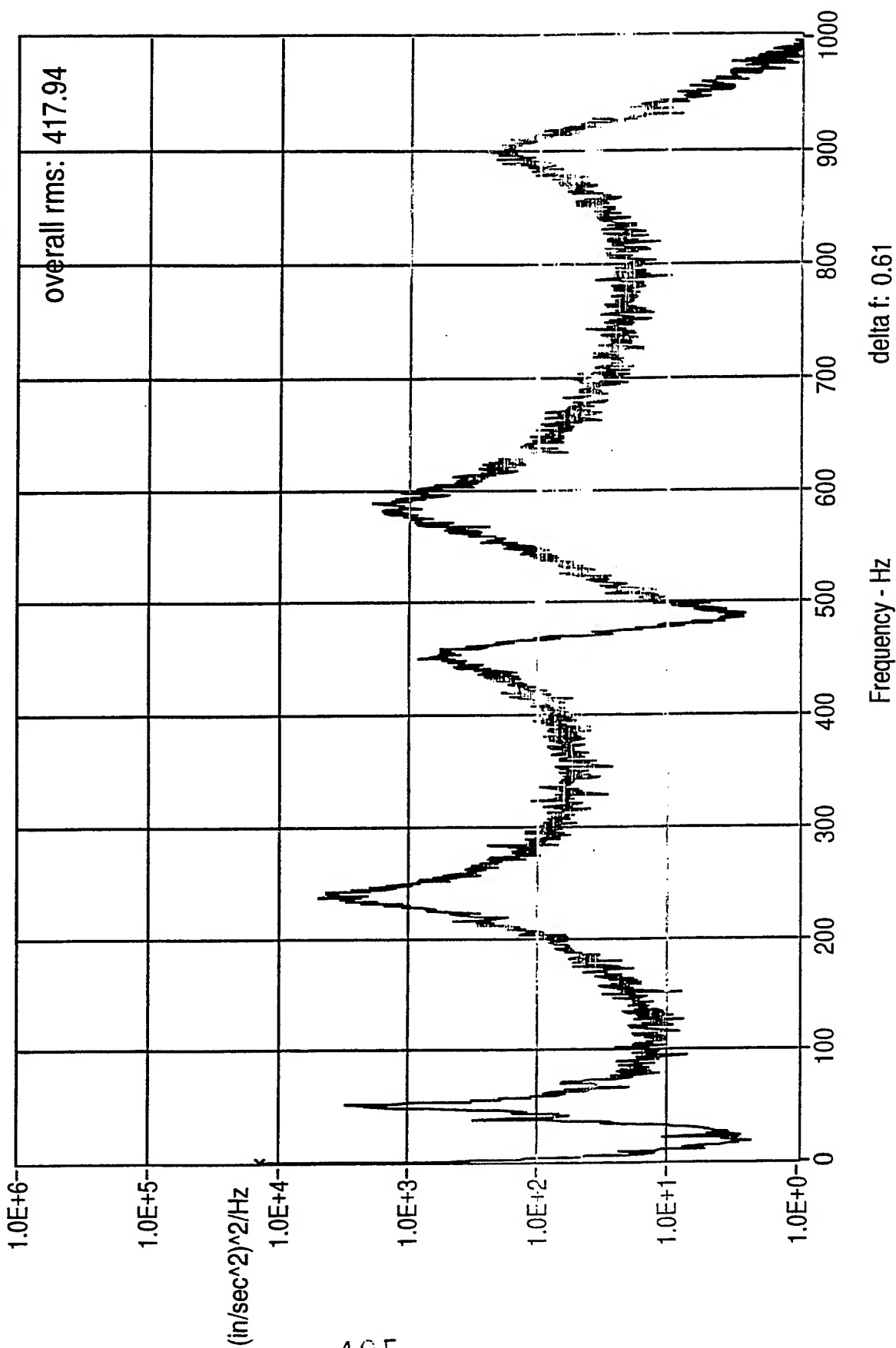


F-15 TPN\_3048: alpha=24 beta=4 bp=65



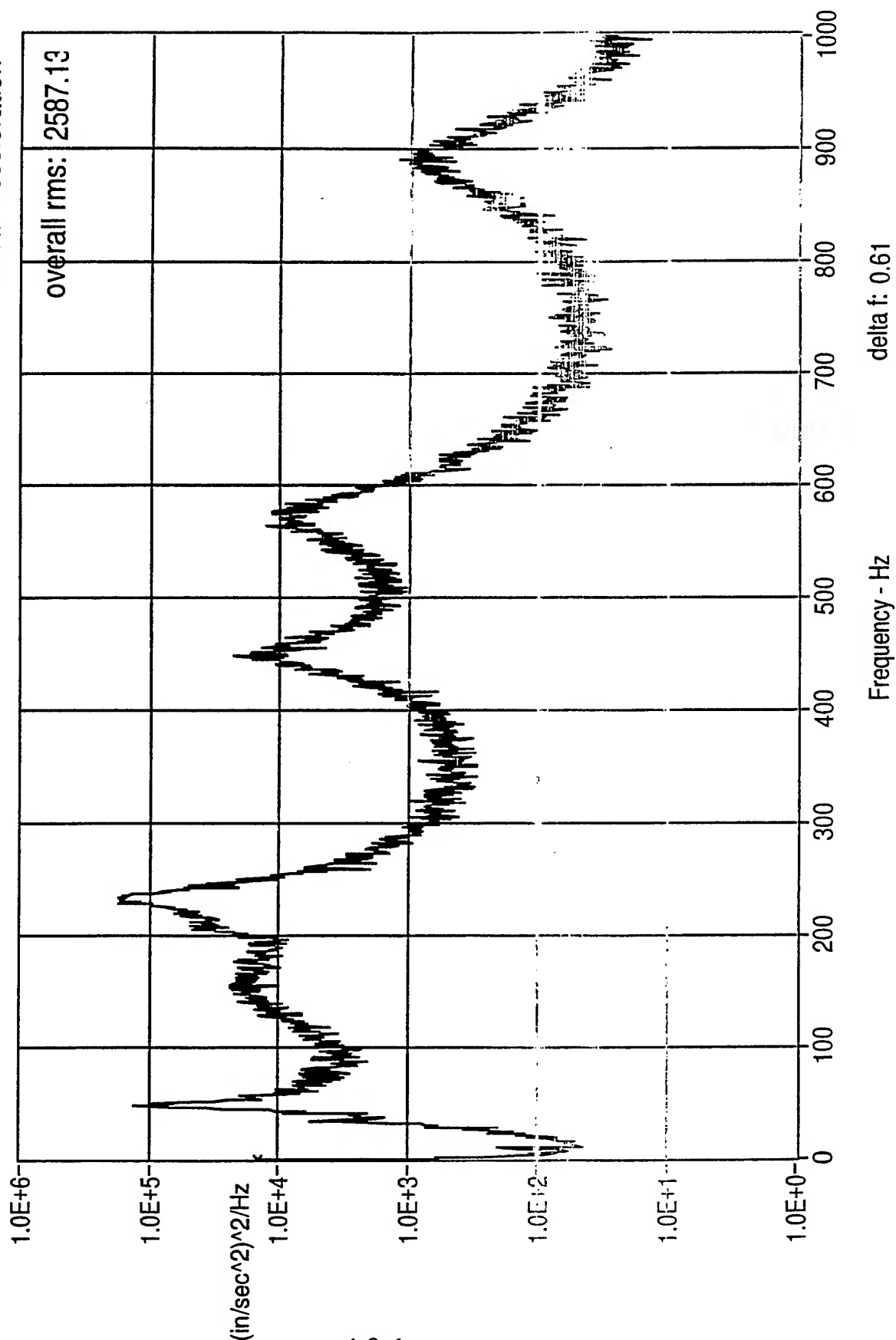
F-15 TPN\_3243: q=30 alpha=8 beta=0 bp=0

Power Spectrum  
Linear Acceleration



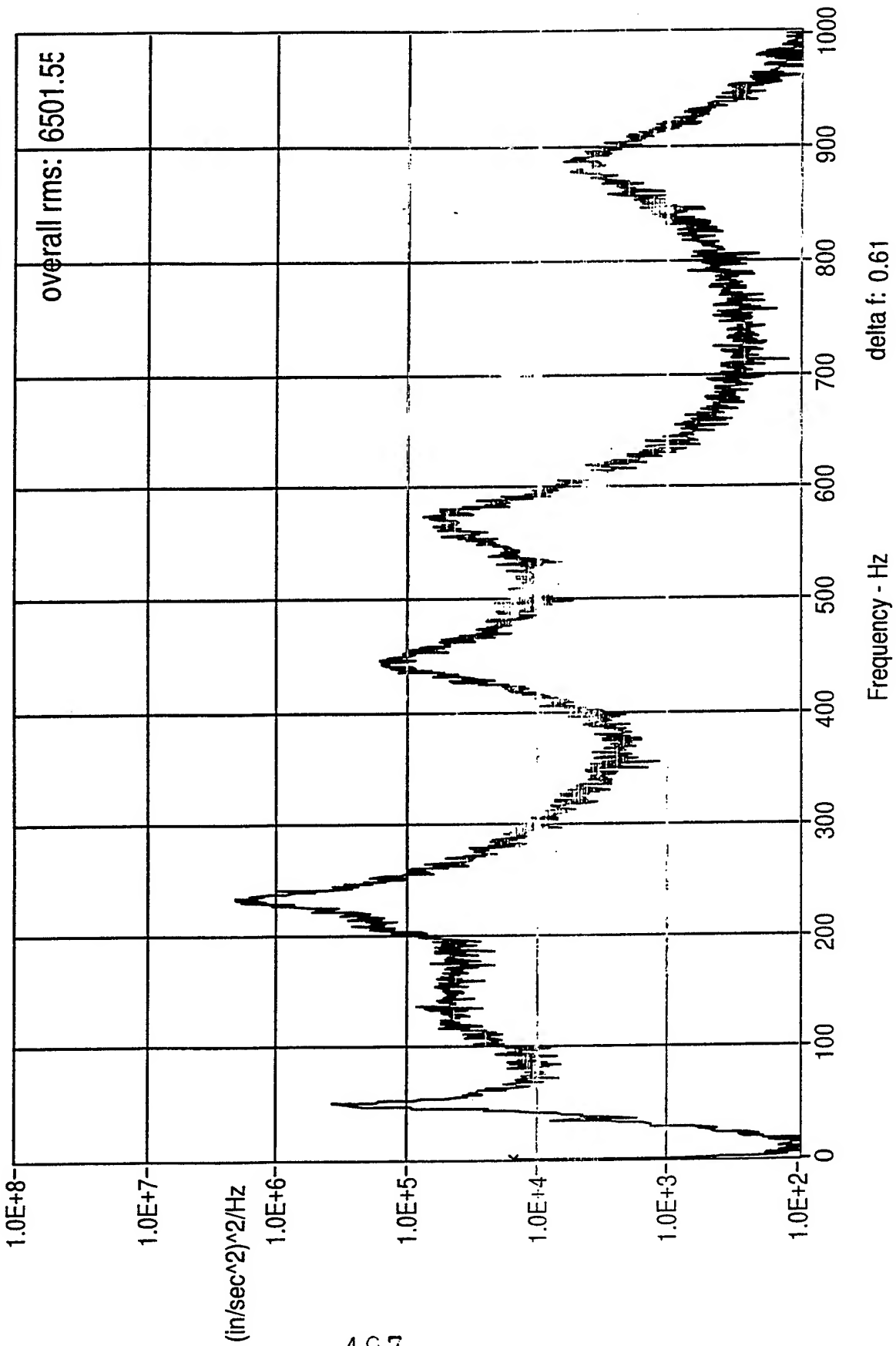
F-15 TPN\_3249: q=30 alpha=20 beta=0 bp=0

Power Spectrum  
Linear Acceleration

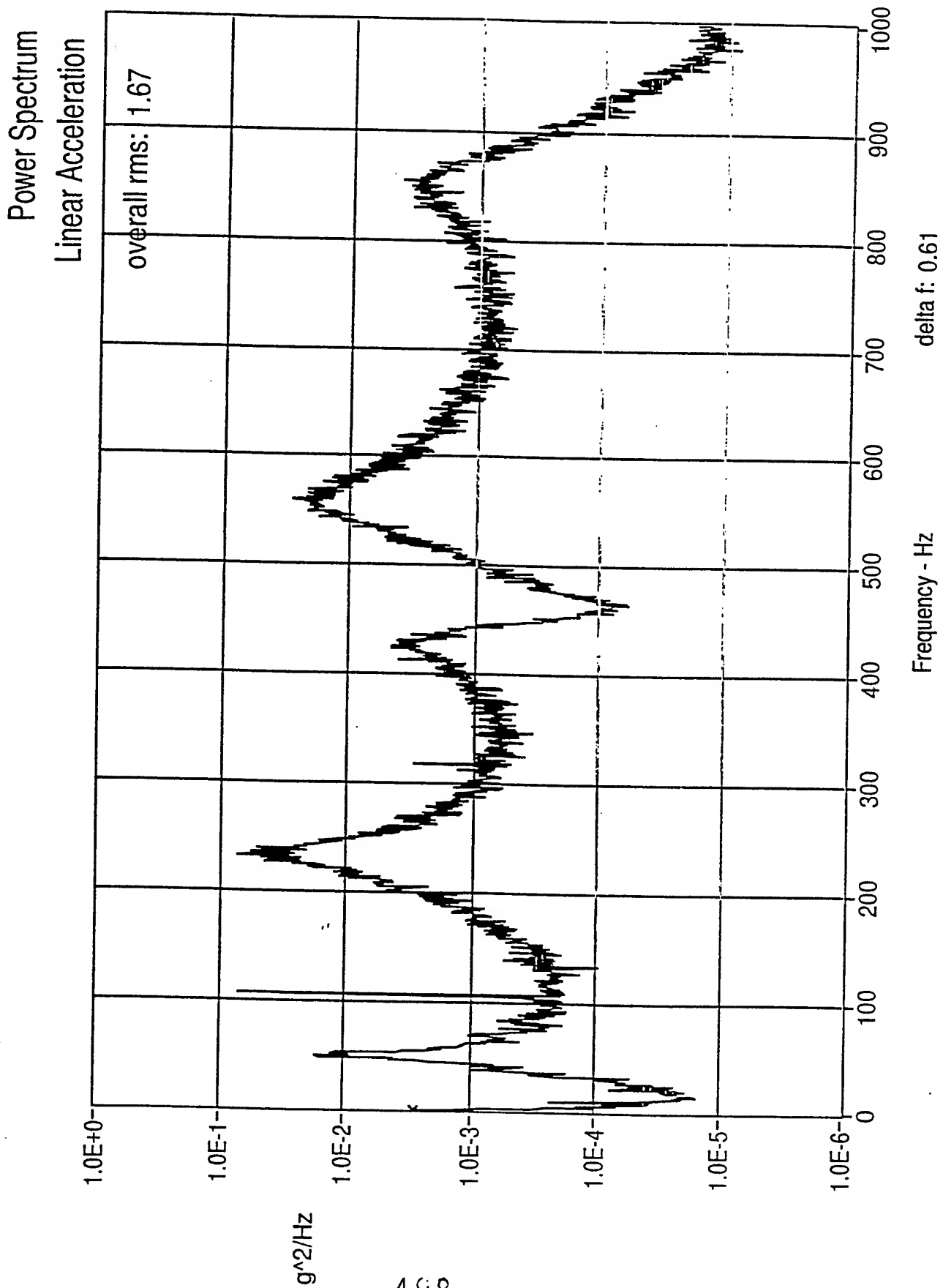


F-15 TPN\_3251: q=30 alpha=24 beta=0 bp=0

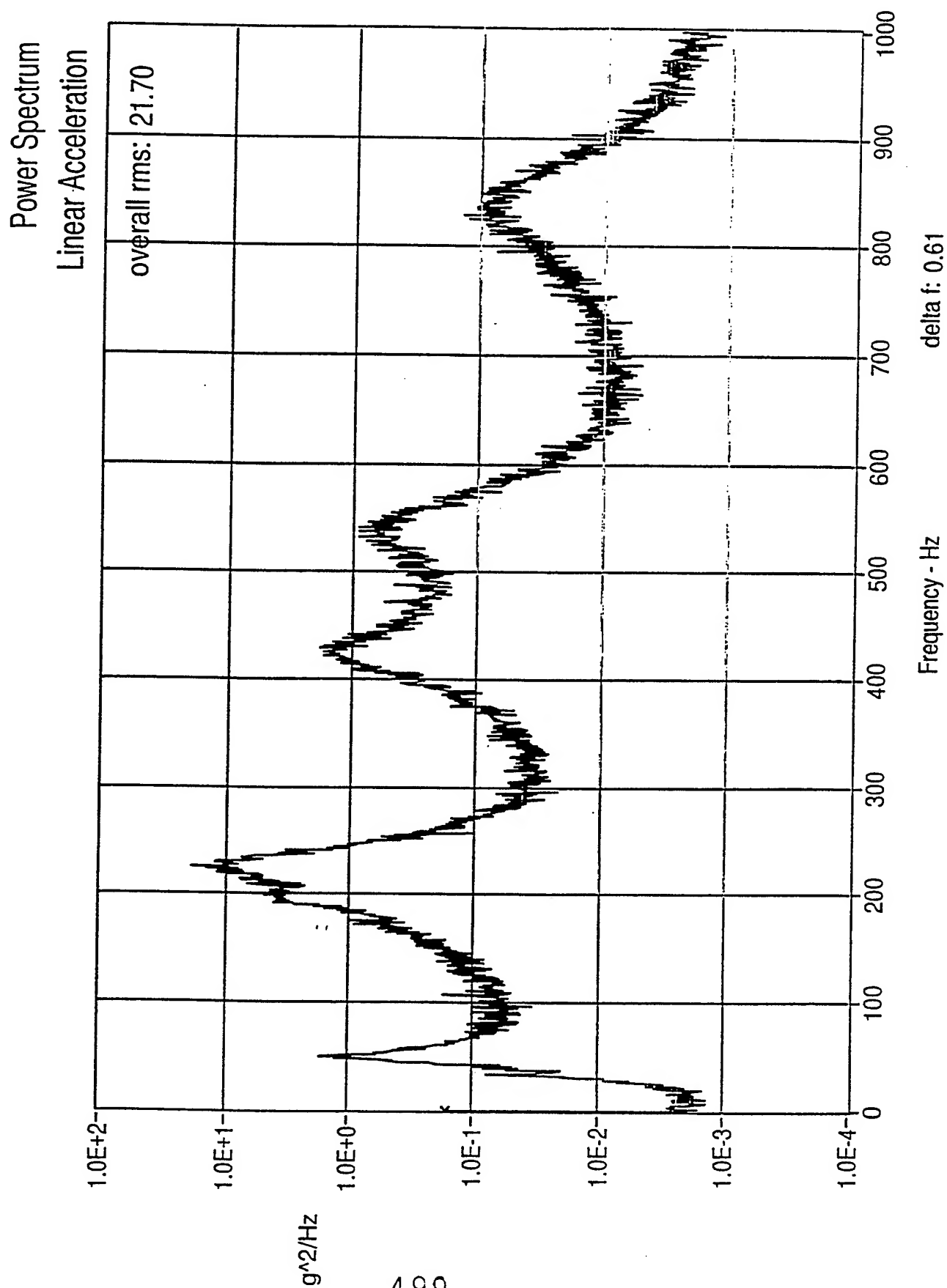
Power Spectrum  
Linear Acceleration



F-15 TPN\_2864: alpha=8 beta=-4 bp=0



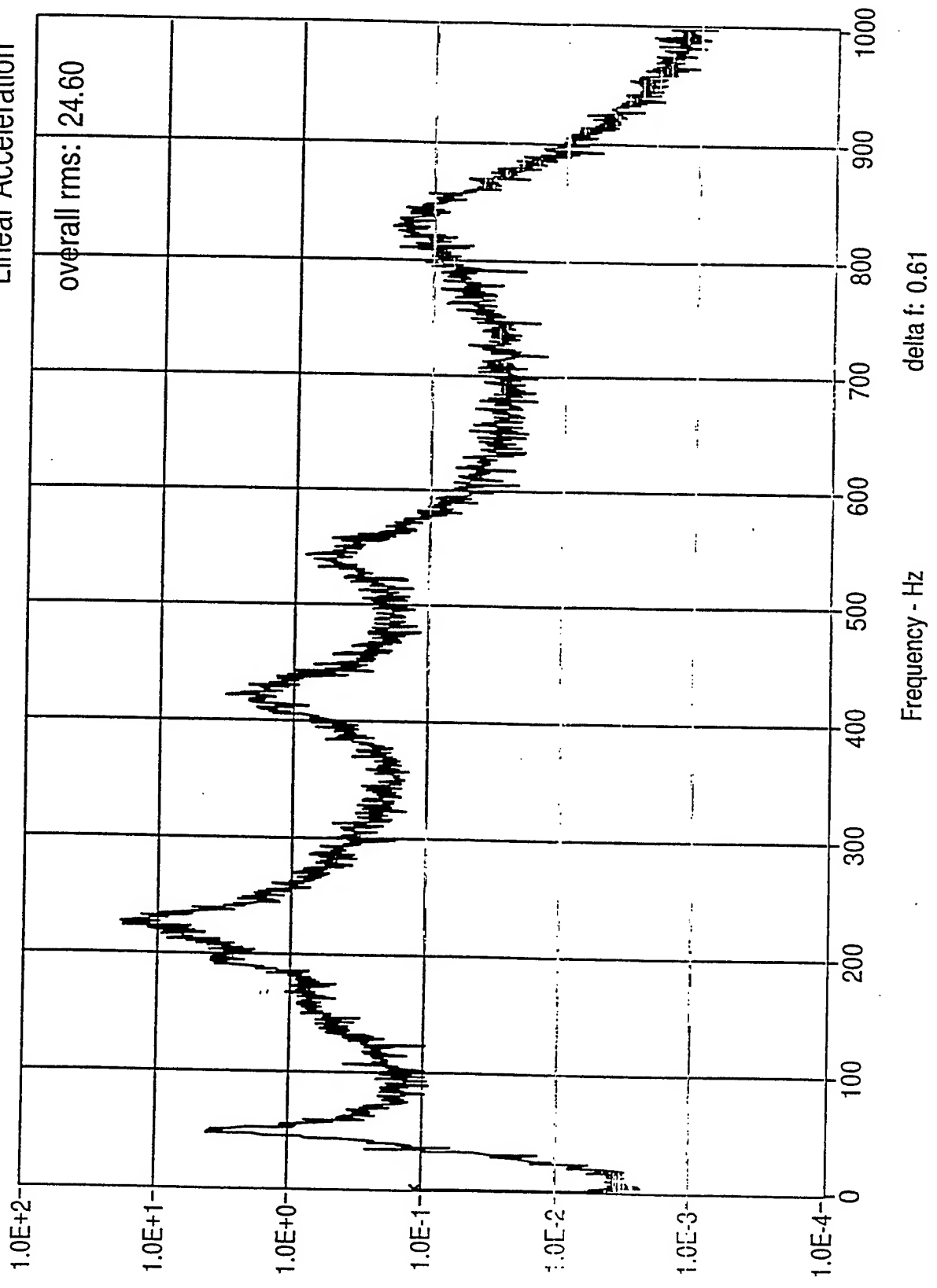
F-15 TPN\_2870: alpha=20 beta=-4 bp=0



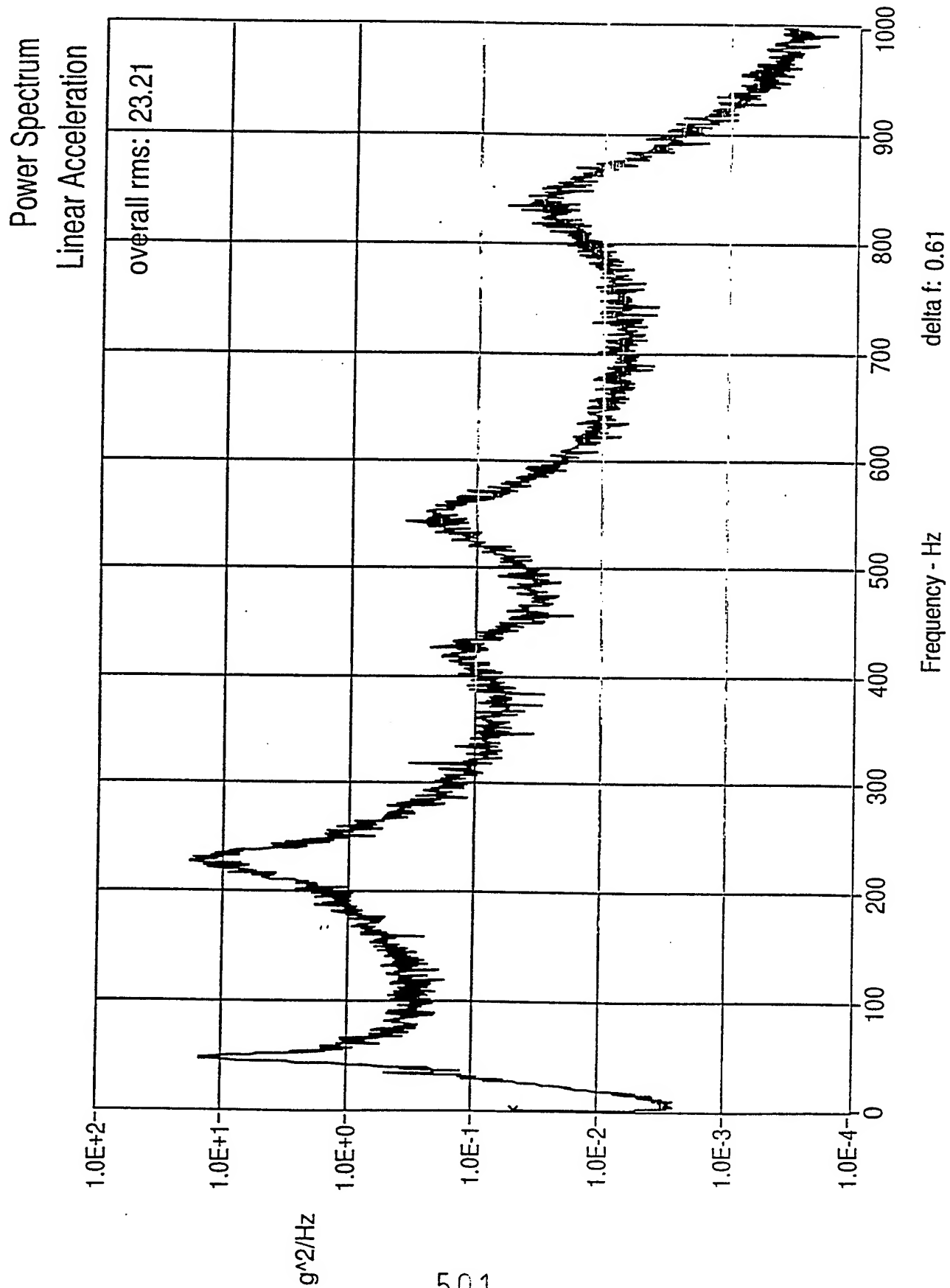


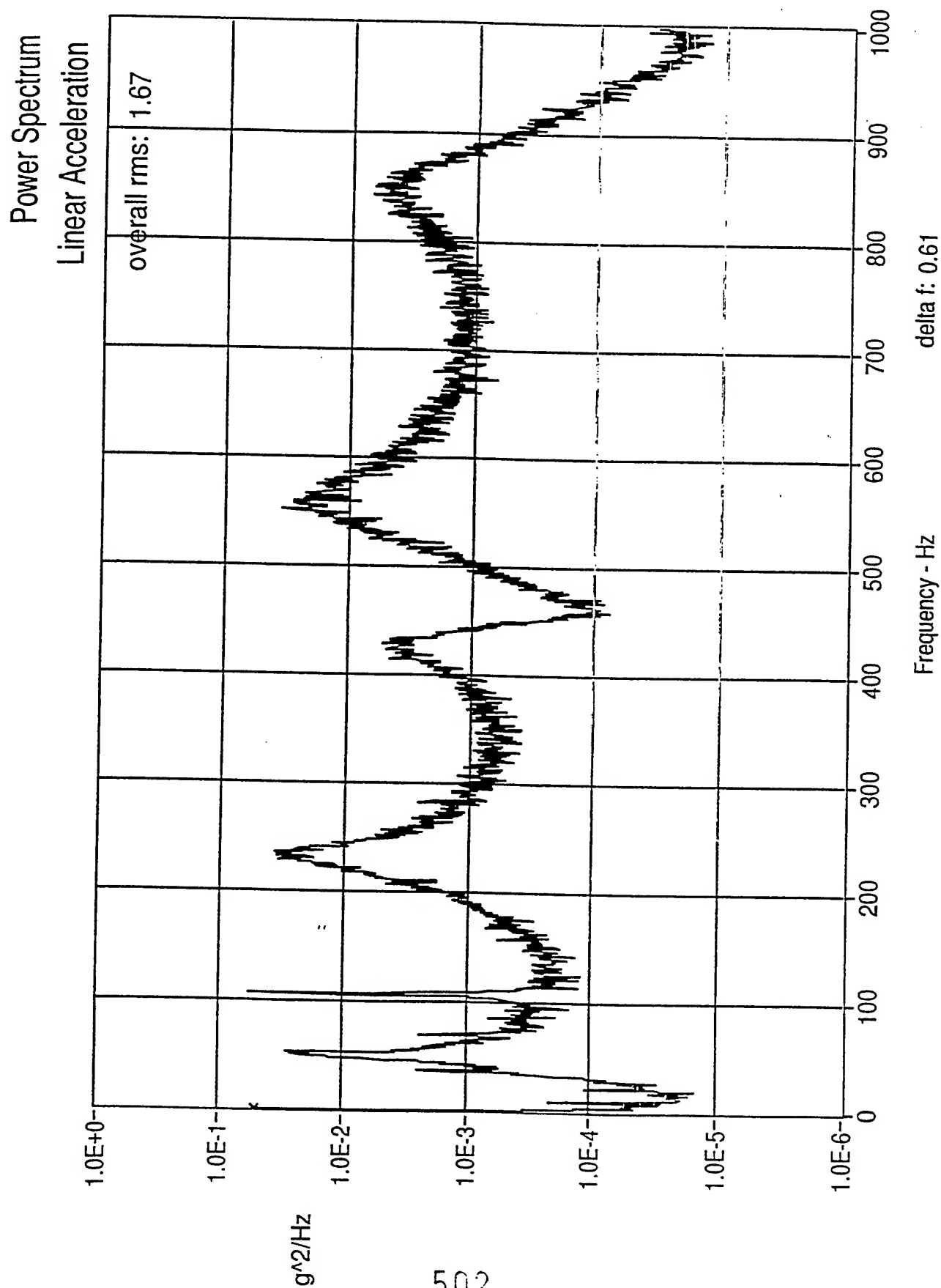
F-15 TPN\_2872: alpha=24 beta=-4 bp=0

Power Spectrum  
Linear Acceleration



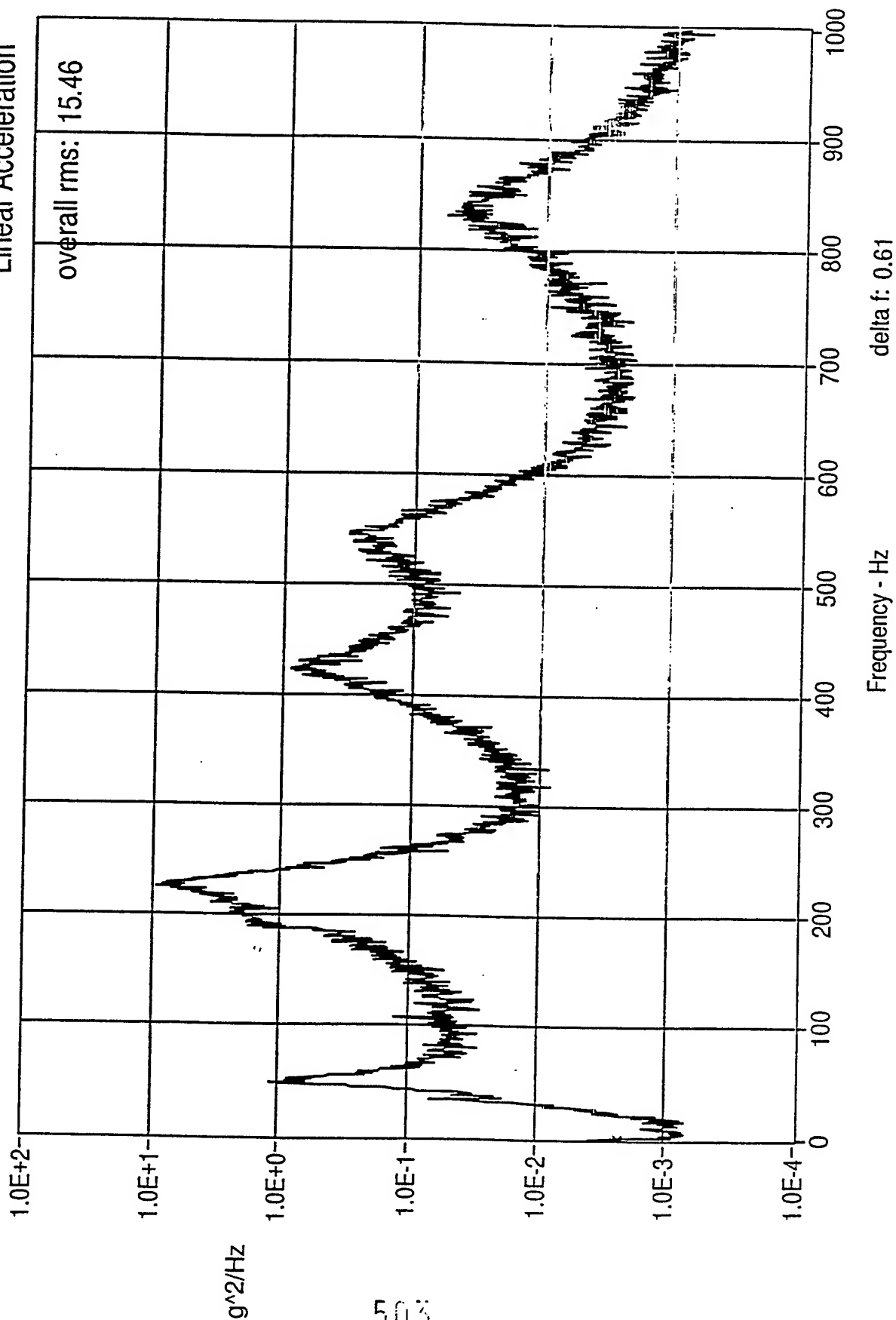
F-15 TPN\_2874: alpha=32 beta=-4 bp=0





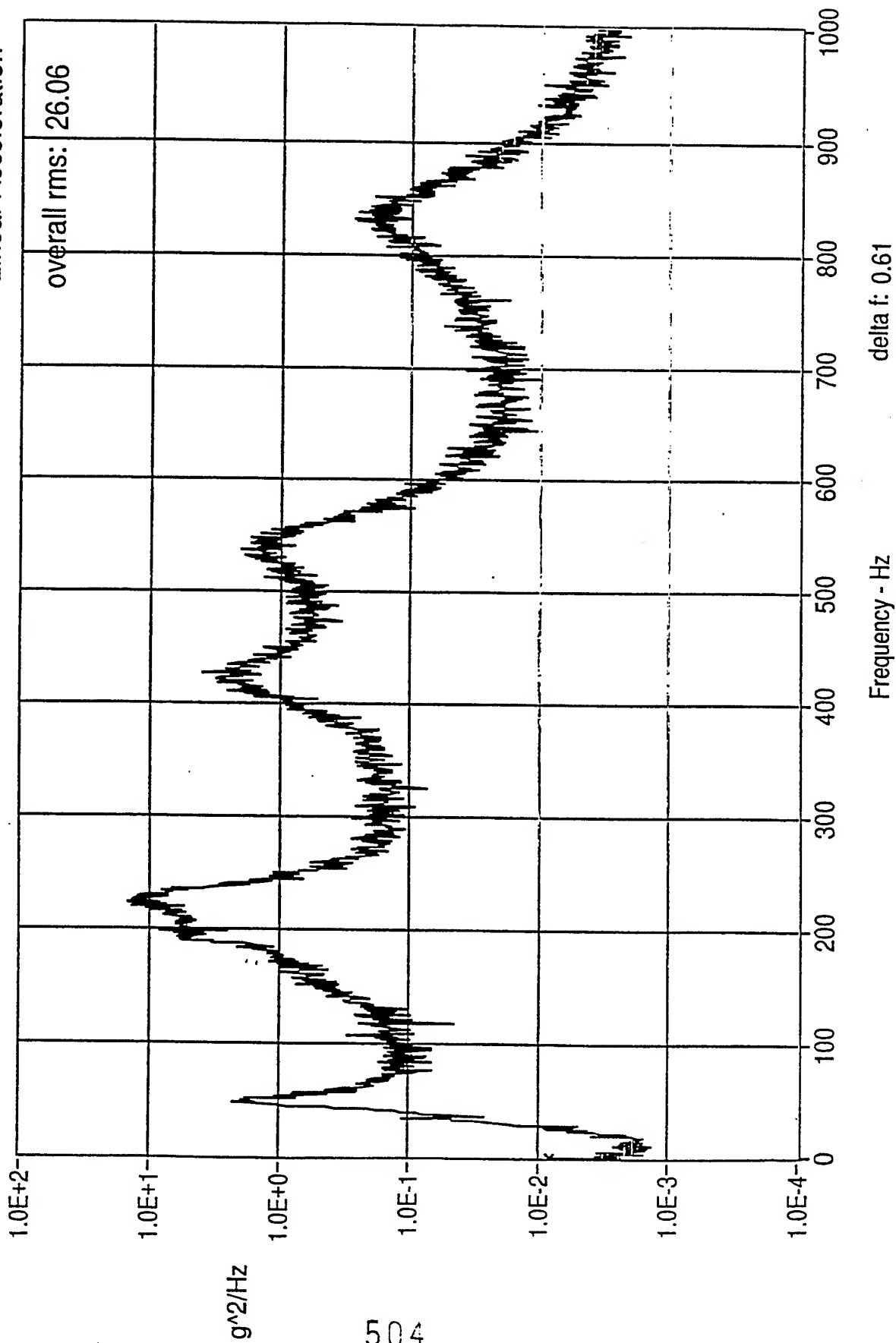
F-15 TPN\_2850: alpha=20 beta=0 bp=0

Power Spectrum  
Linear Acceleration

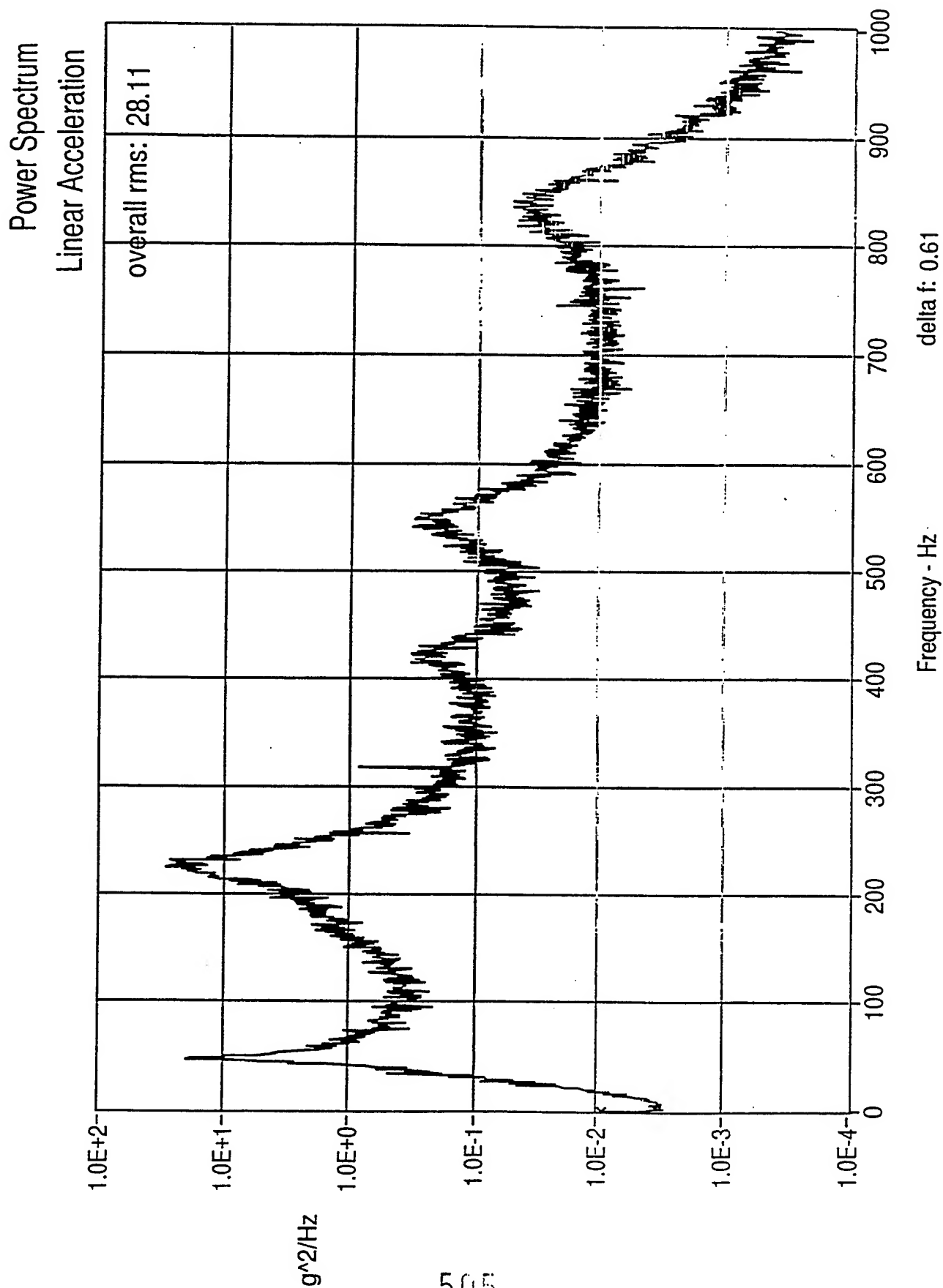


F-15 TPN\_2852: alpha=24 beta=0 bp=0

Power Spectrum  
Linear Acceleration

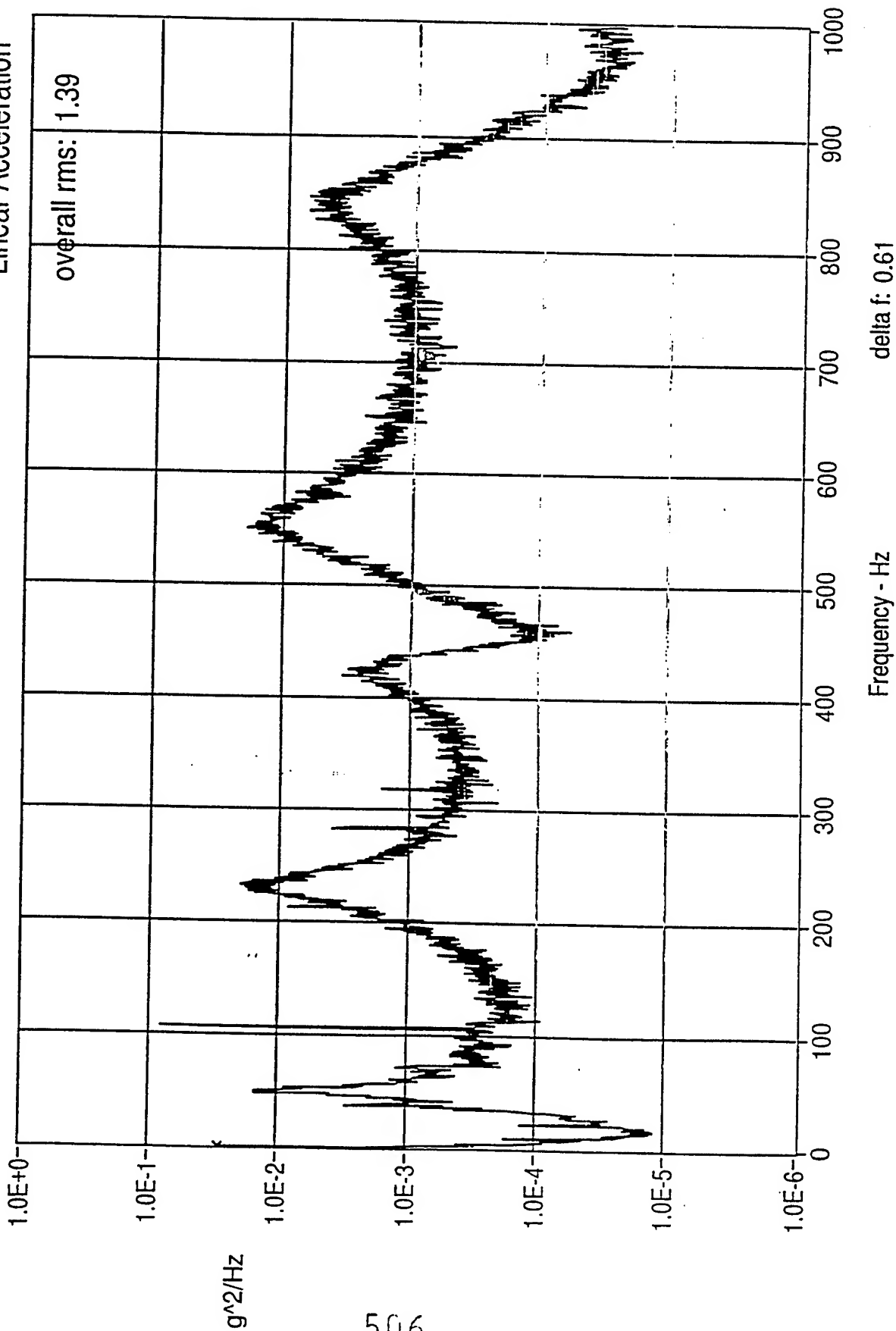


F-15 TPN\_2854: alpha=32 beta=0 bp=0

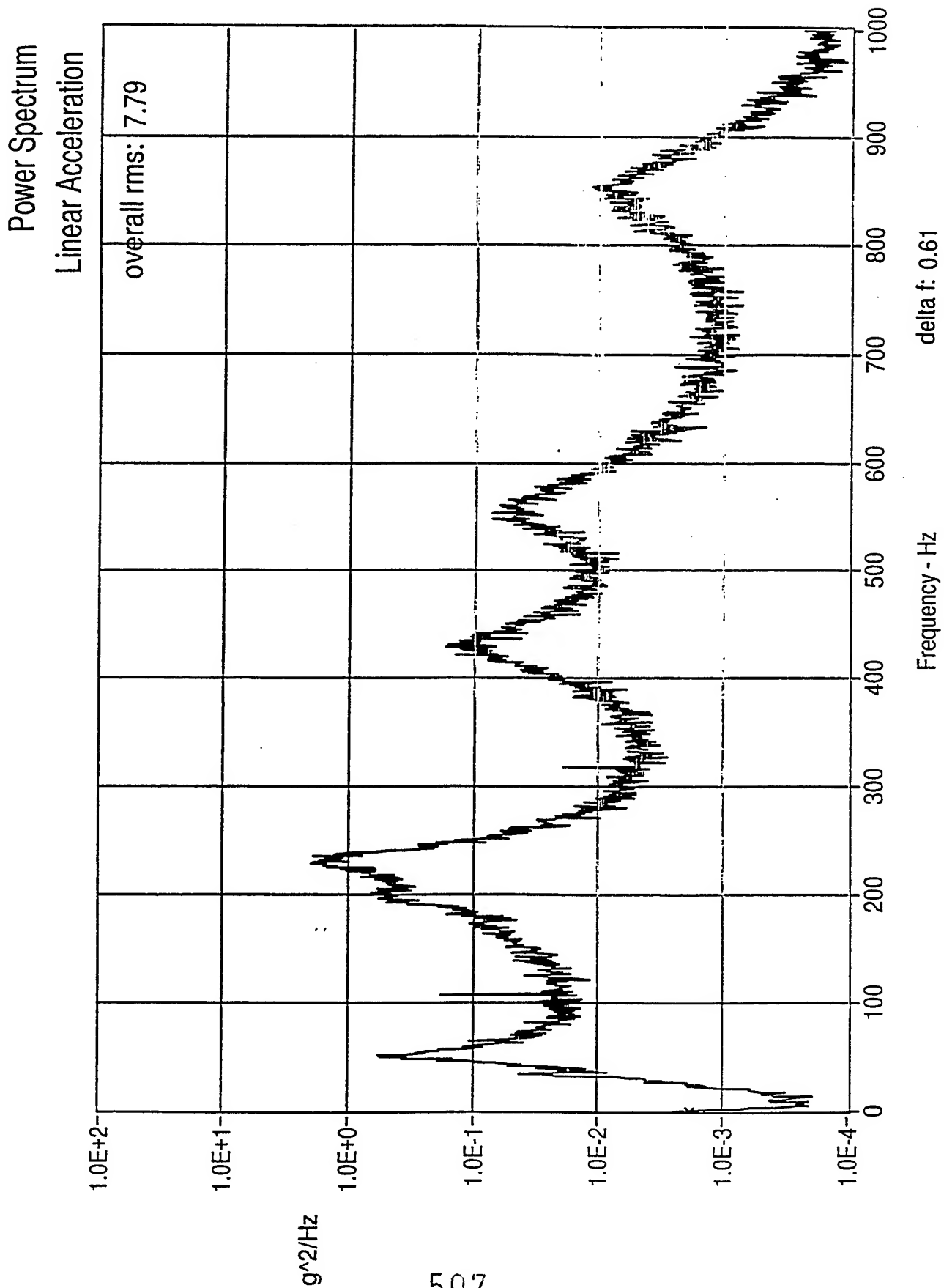


F-15 TPN\_2918: alpha=8 beta=4 bp=0

Power Spectrum  
Linear Acceleration

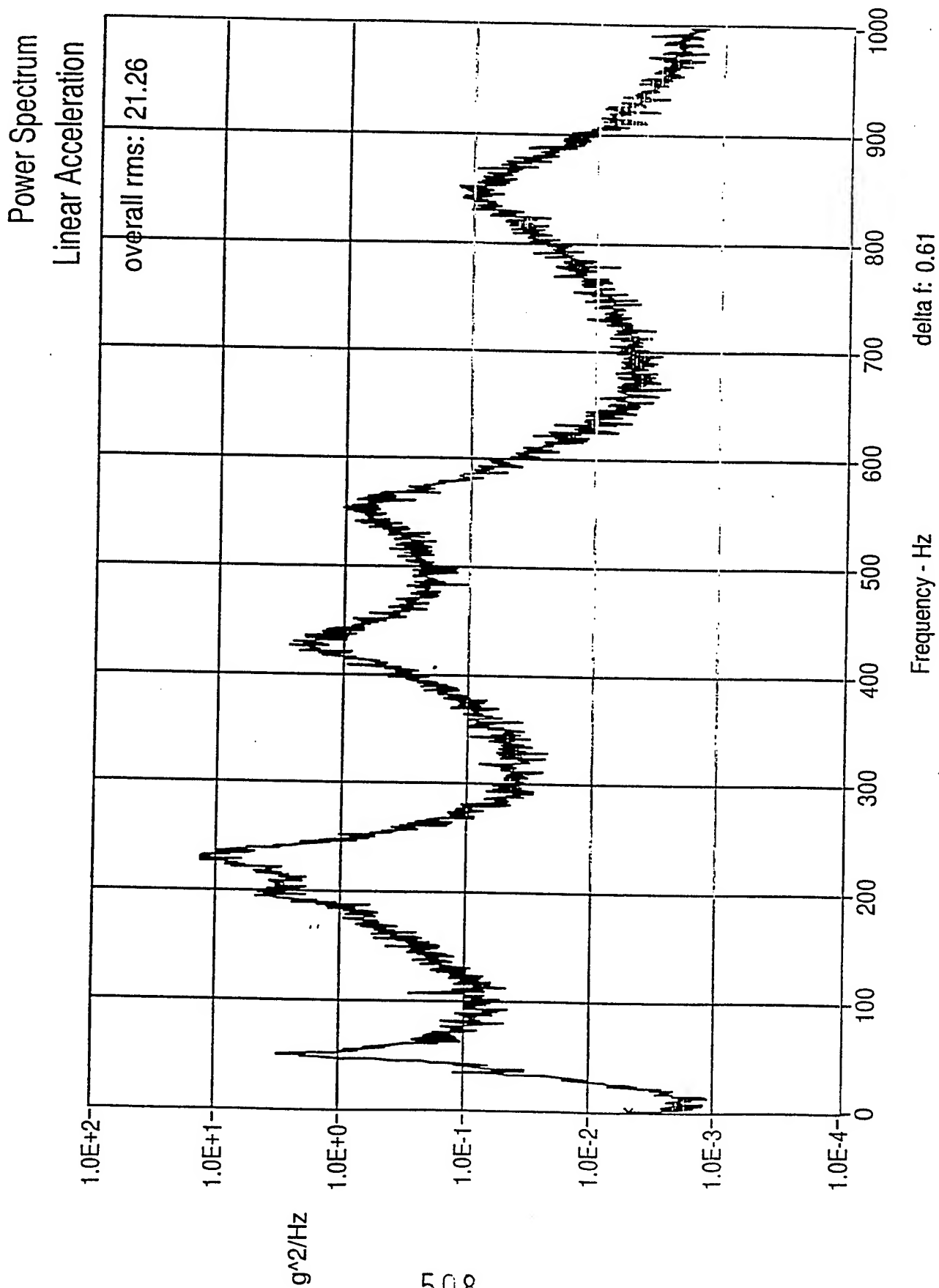


F-15 TPN\_2924: alpha=20 beta=4 bp=0

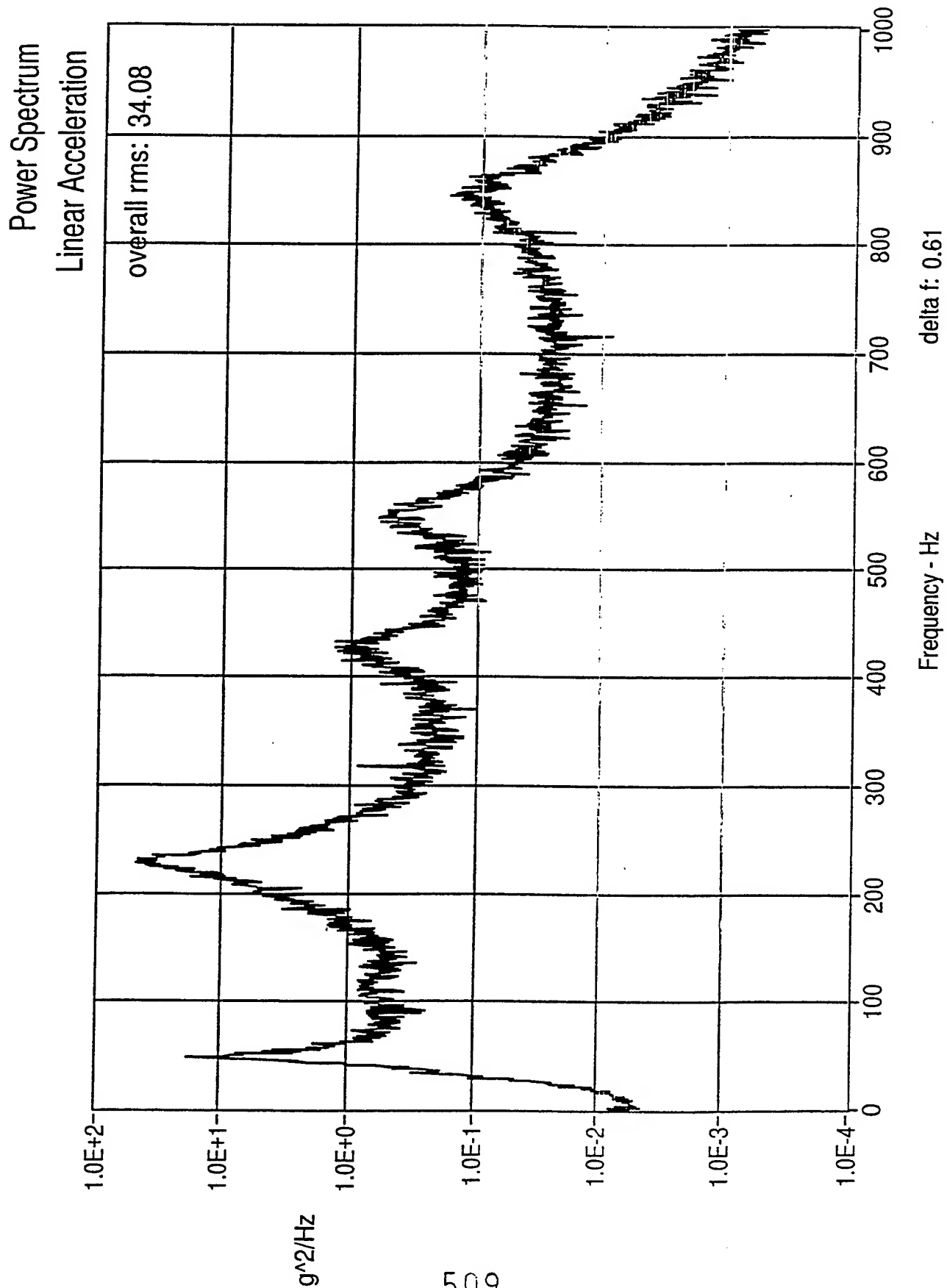


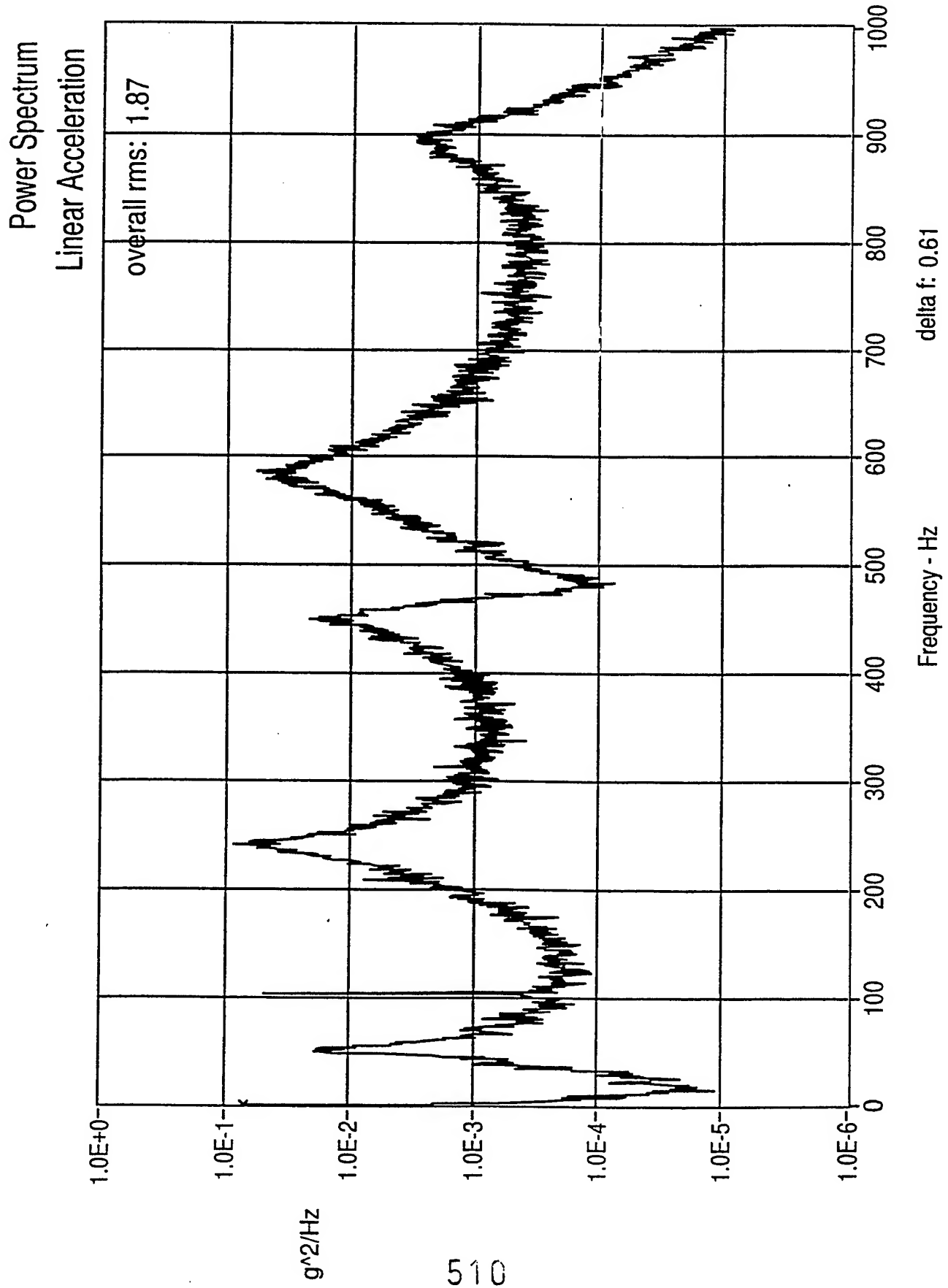


F-15 TPN\_2926: alpha=24 beta=4 bp=0



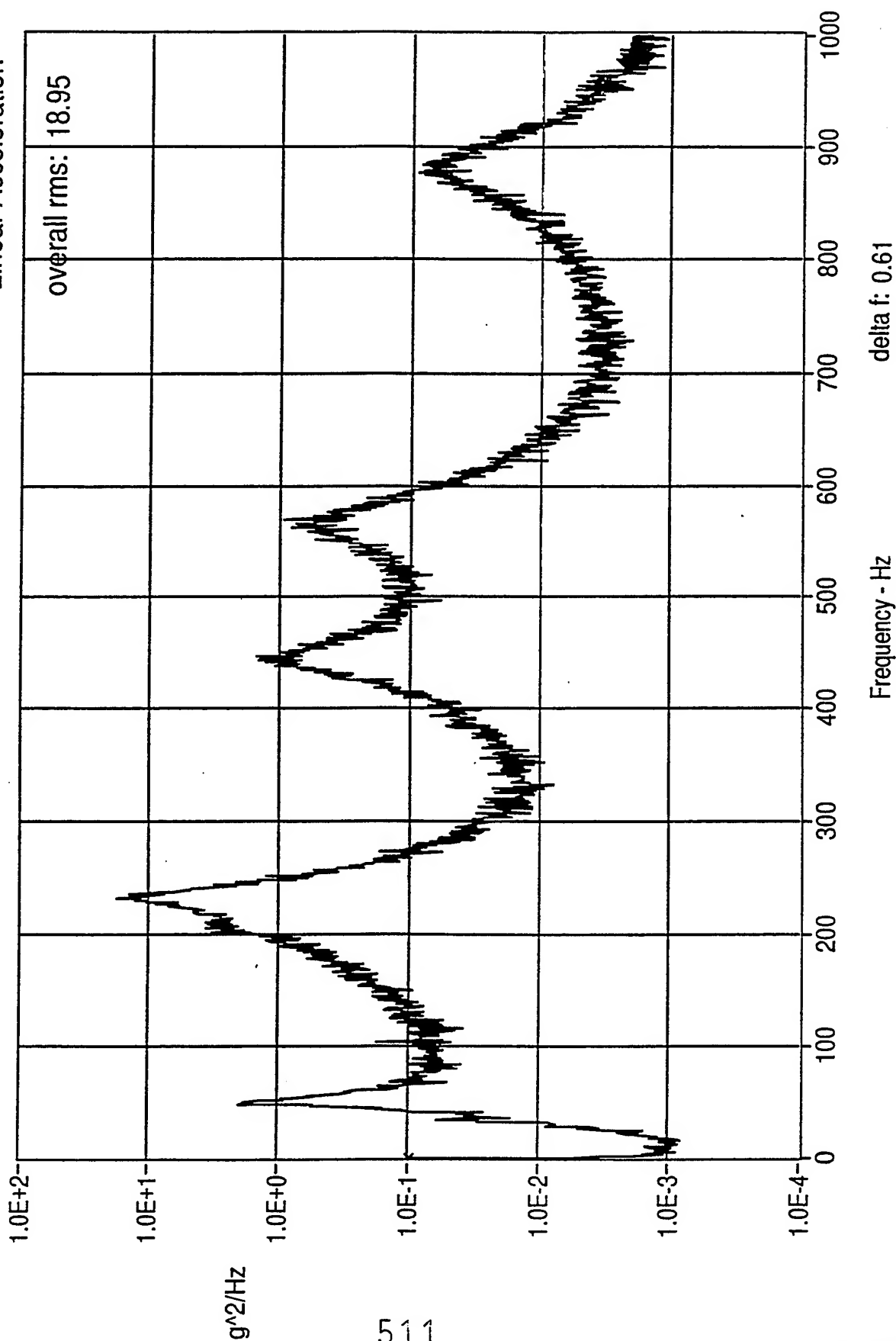
F-15 TPN\_2928: alpha=32 beta=4 bp=0

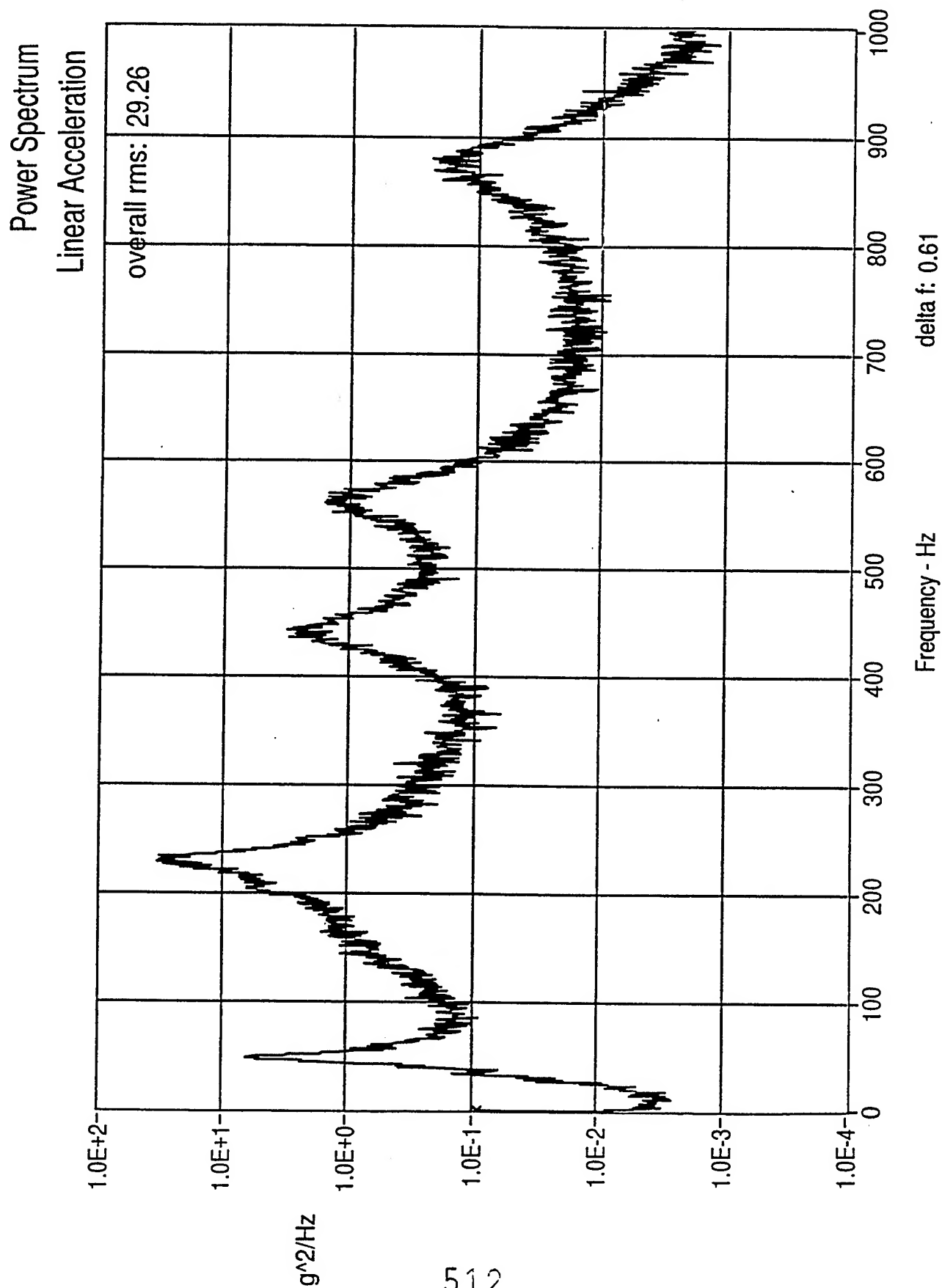




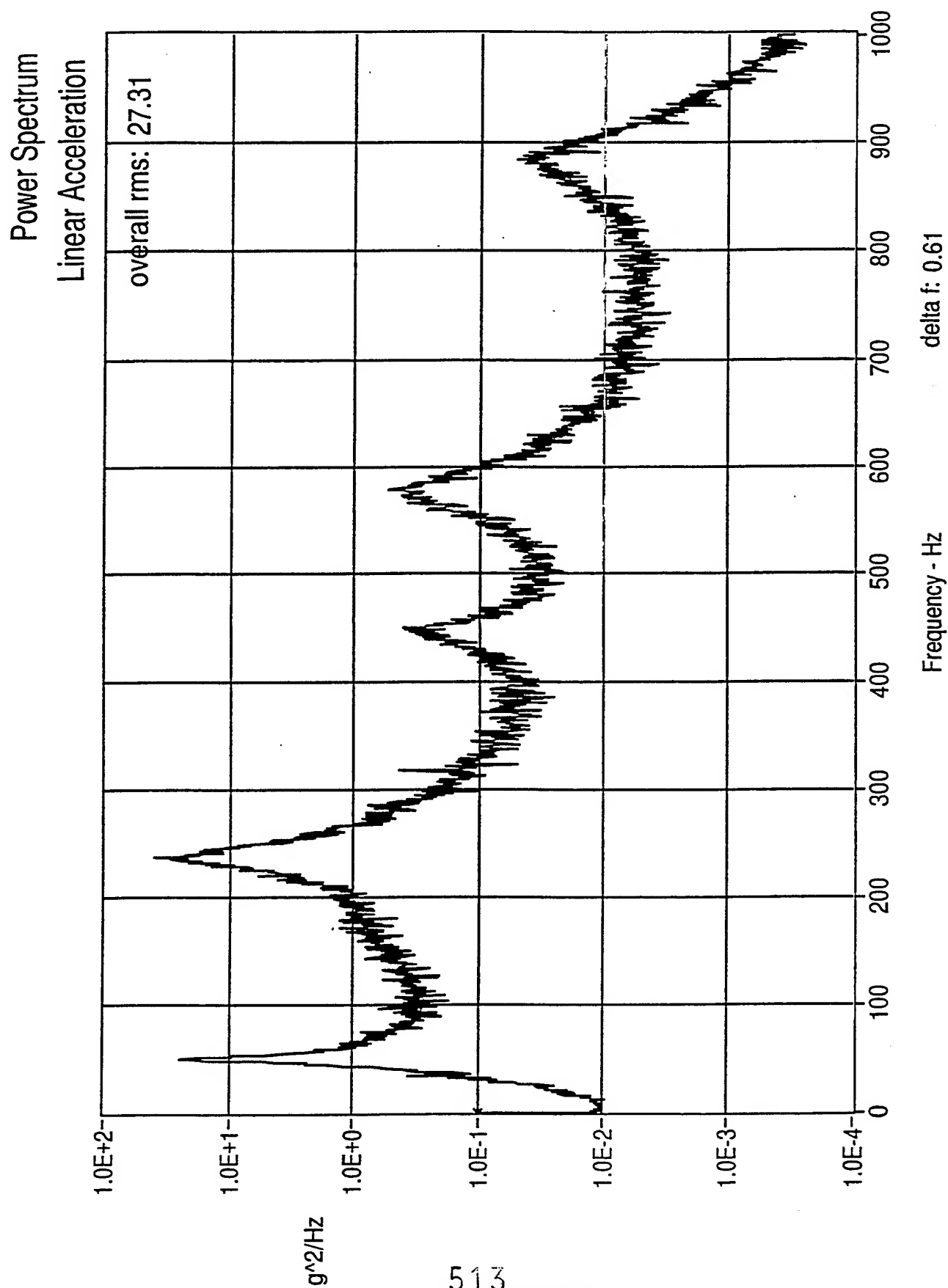
F-15 TPN\_3375: alpha=20 beta=-4 bp=45

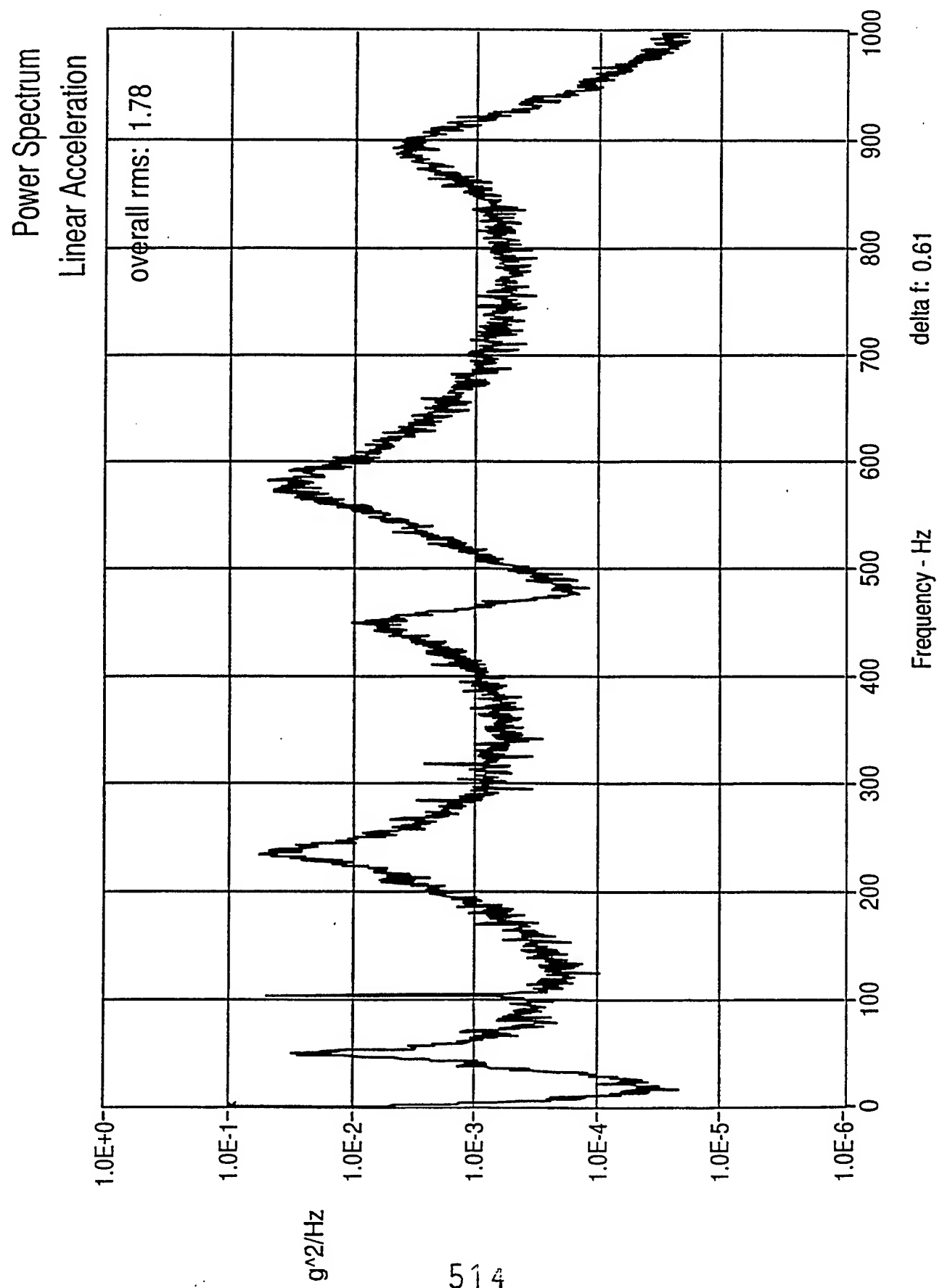
Power Spectrum  
Linear Acceleration



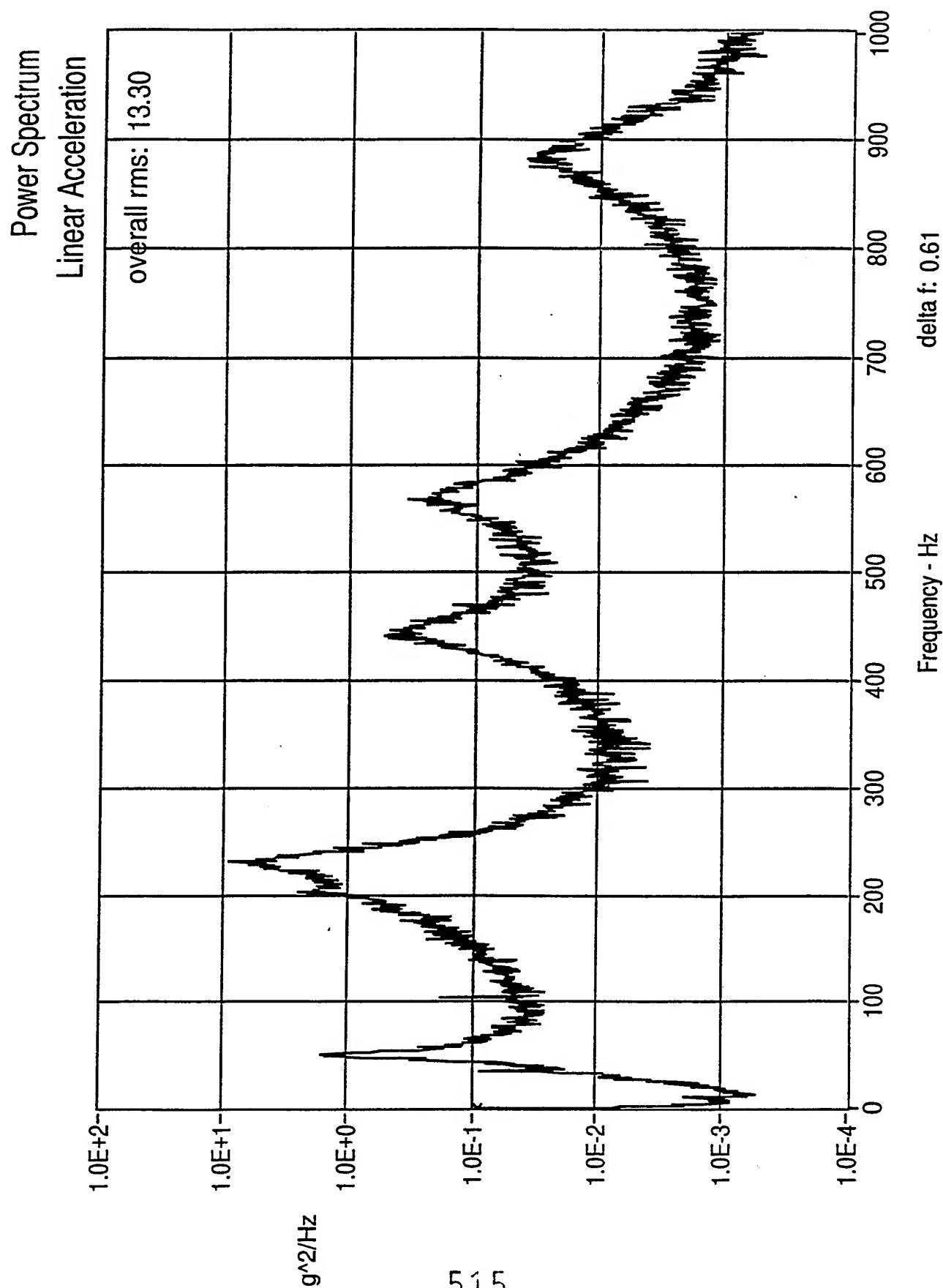


F-15 TPN\_3379: alpha=32 beta=-4 bp=45

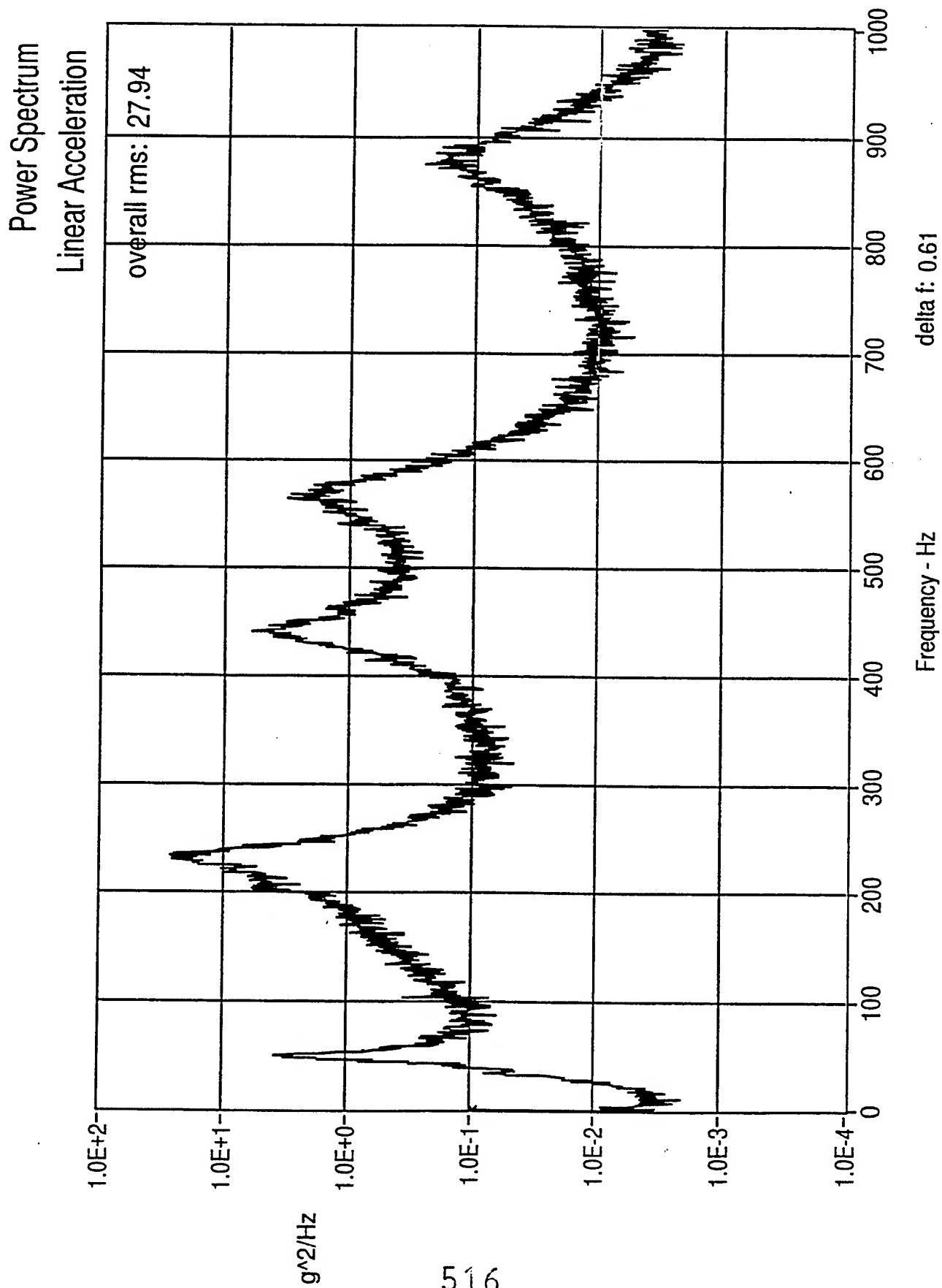




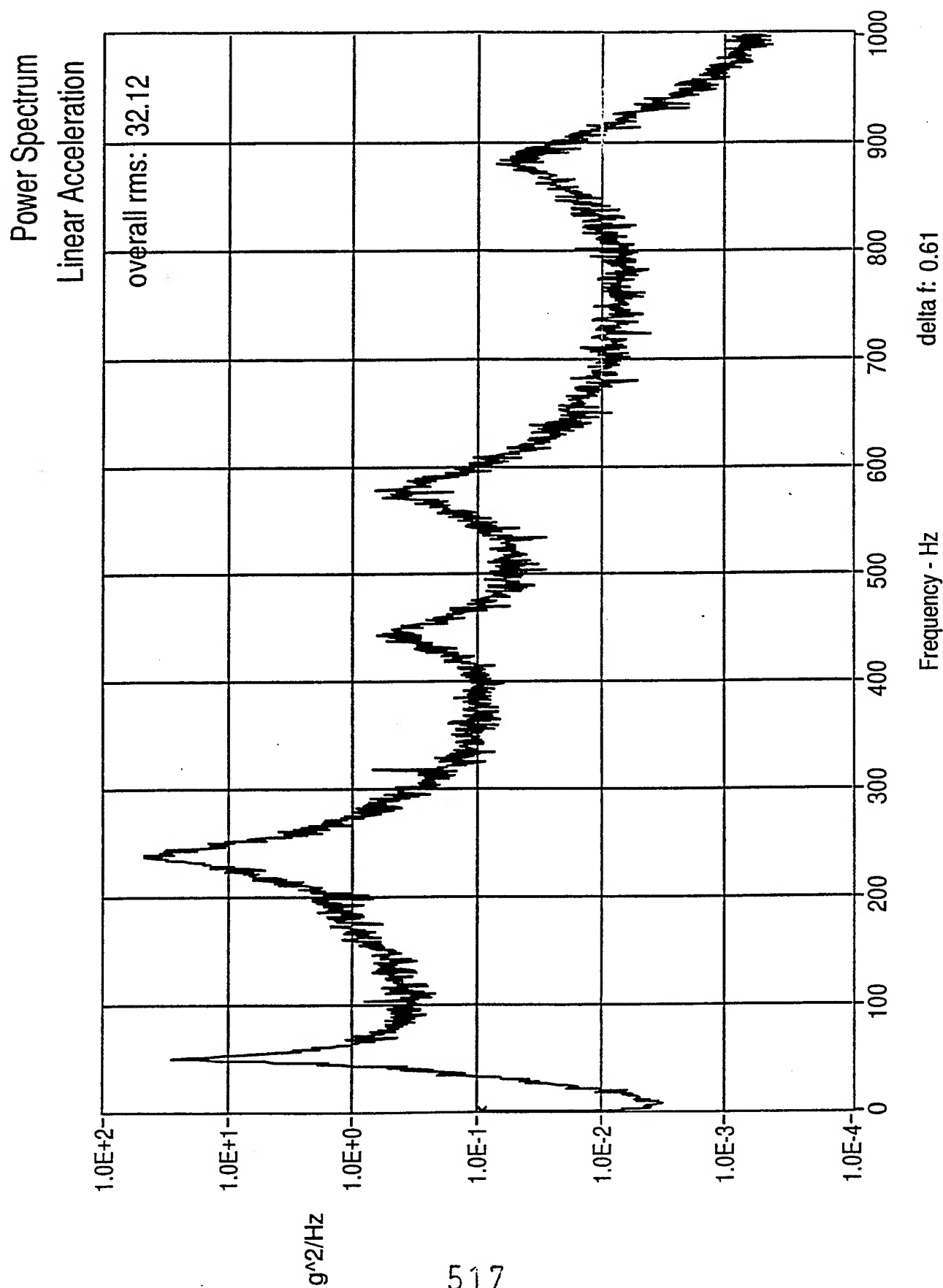
F-15 TPN\_3339: alpha=20 beta=0 bp=45

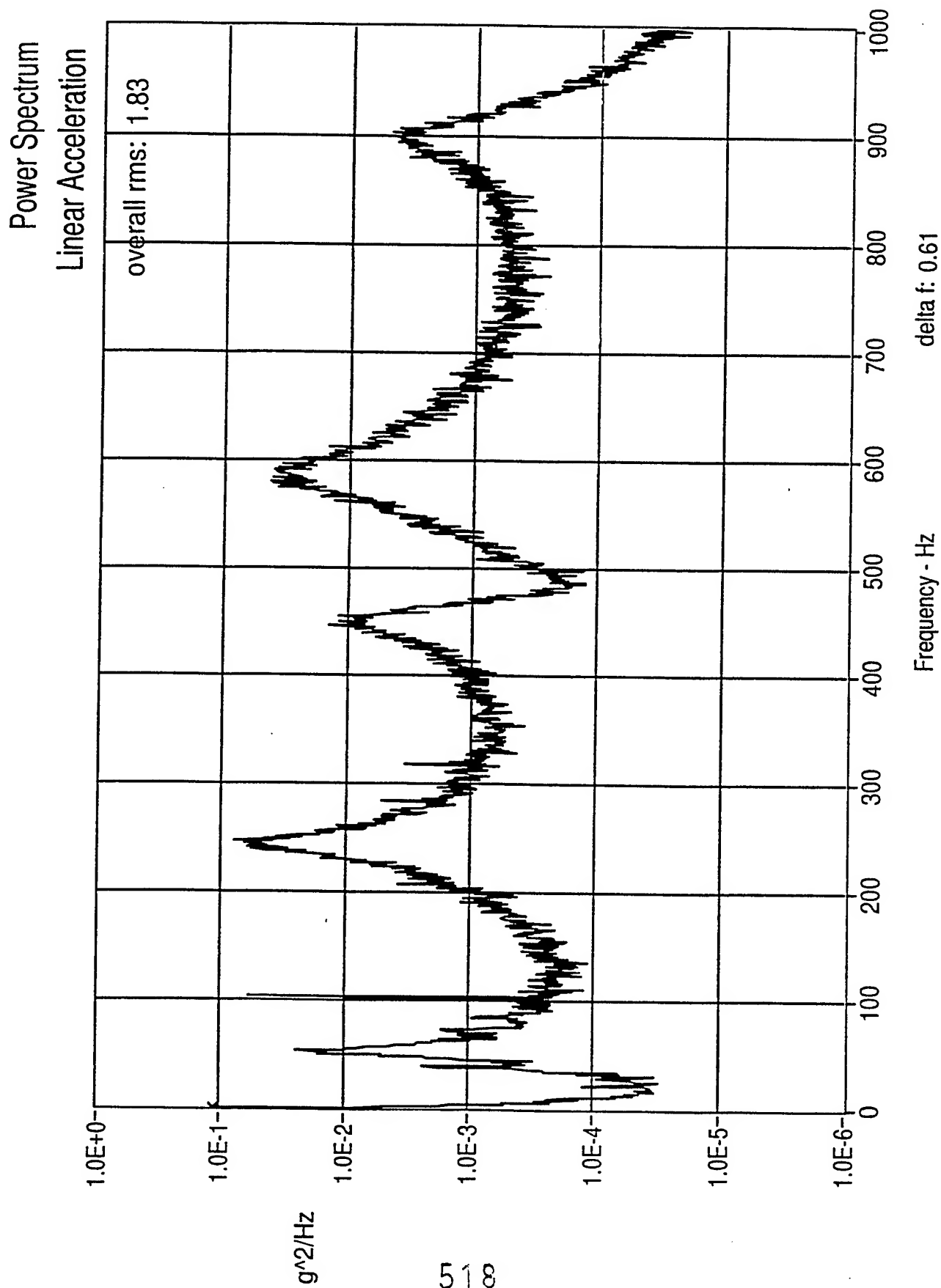




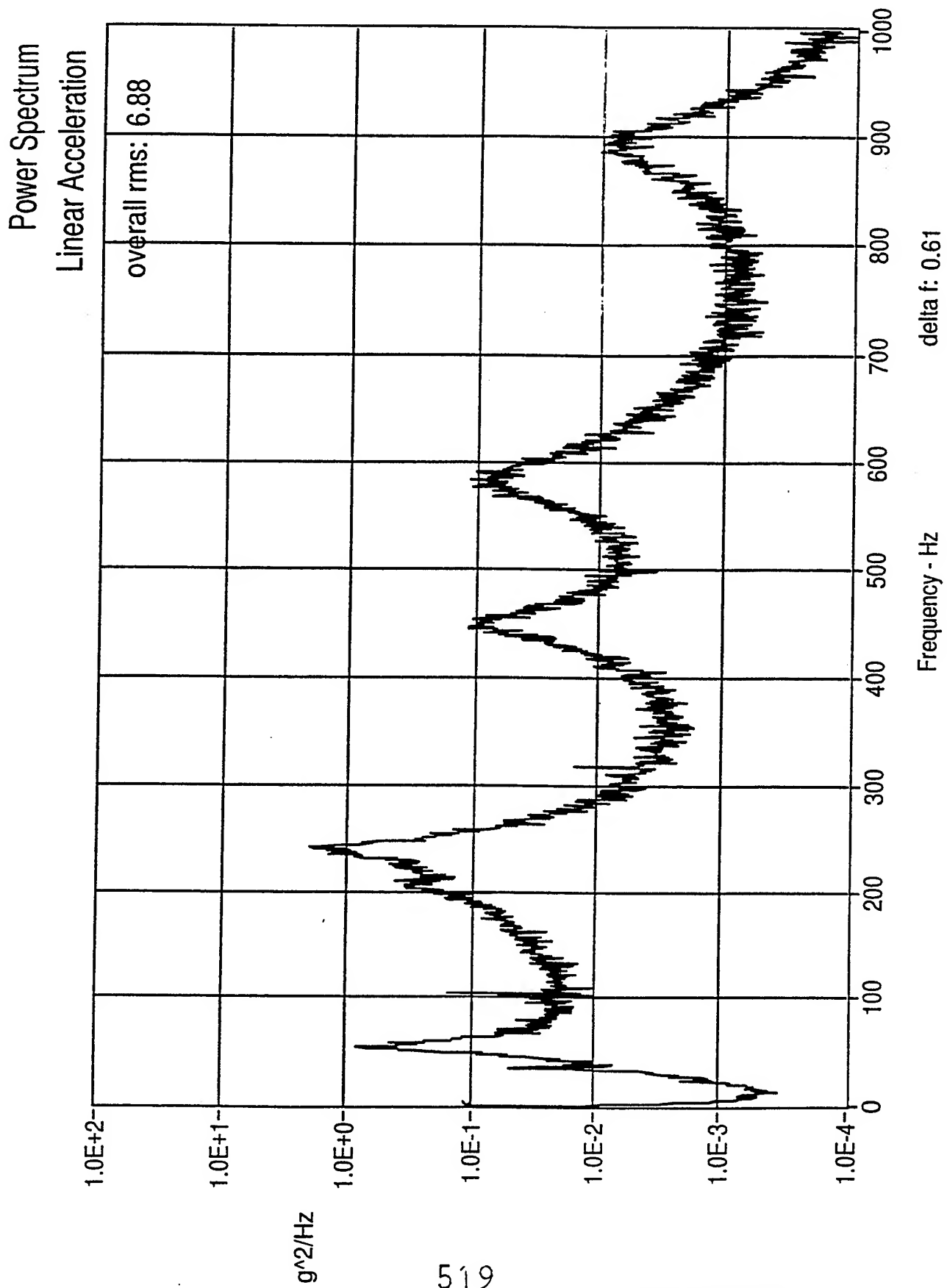


F-15 TPN\_3343: alpha=32 beta=0 bp=45



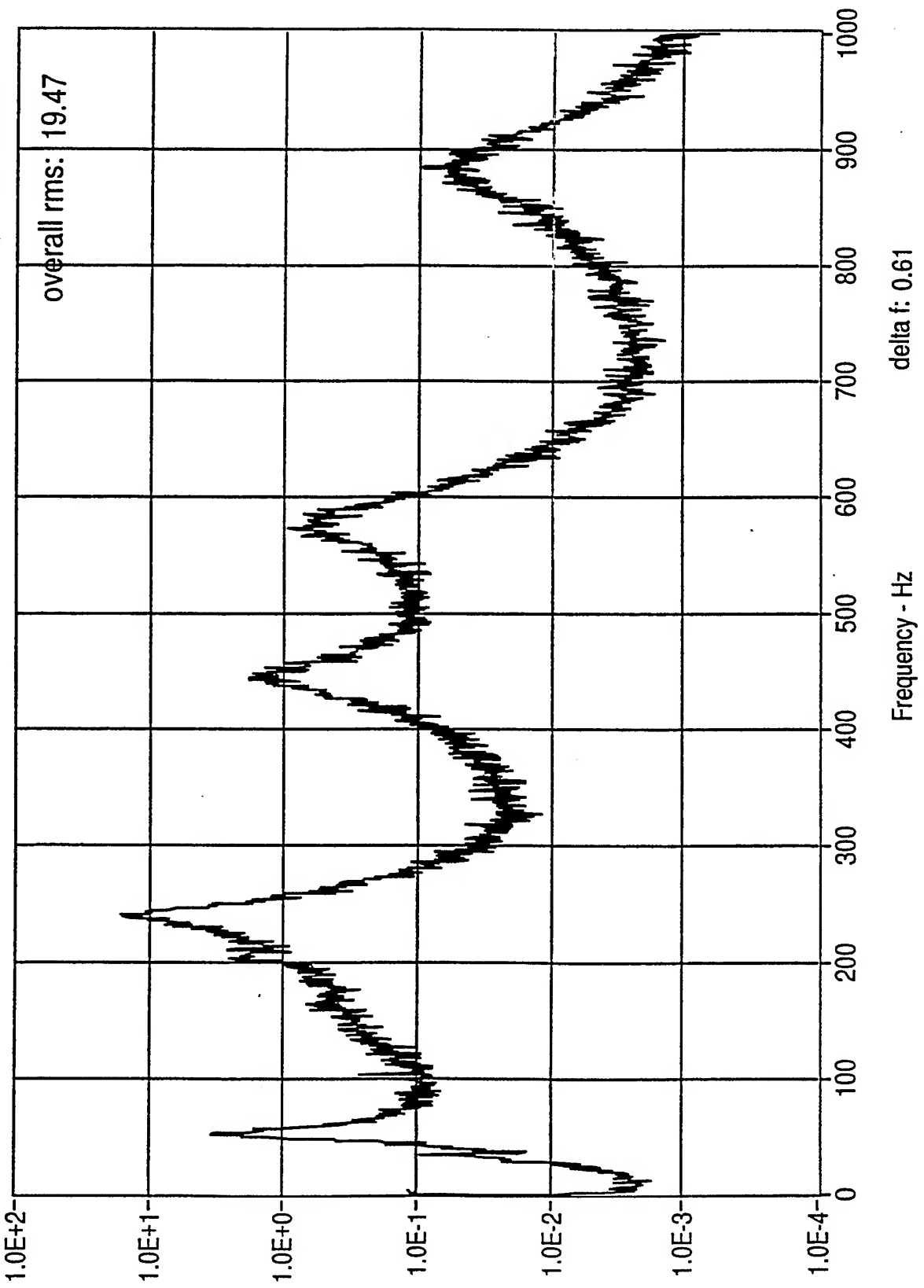


F-15 TPN\_3357: alpha=20 beta=4 bp=45

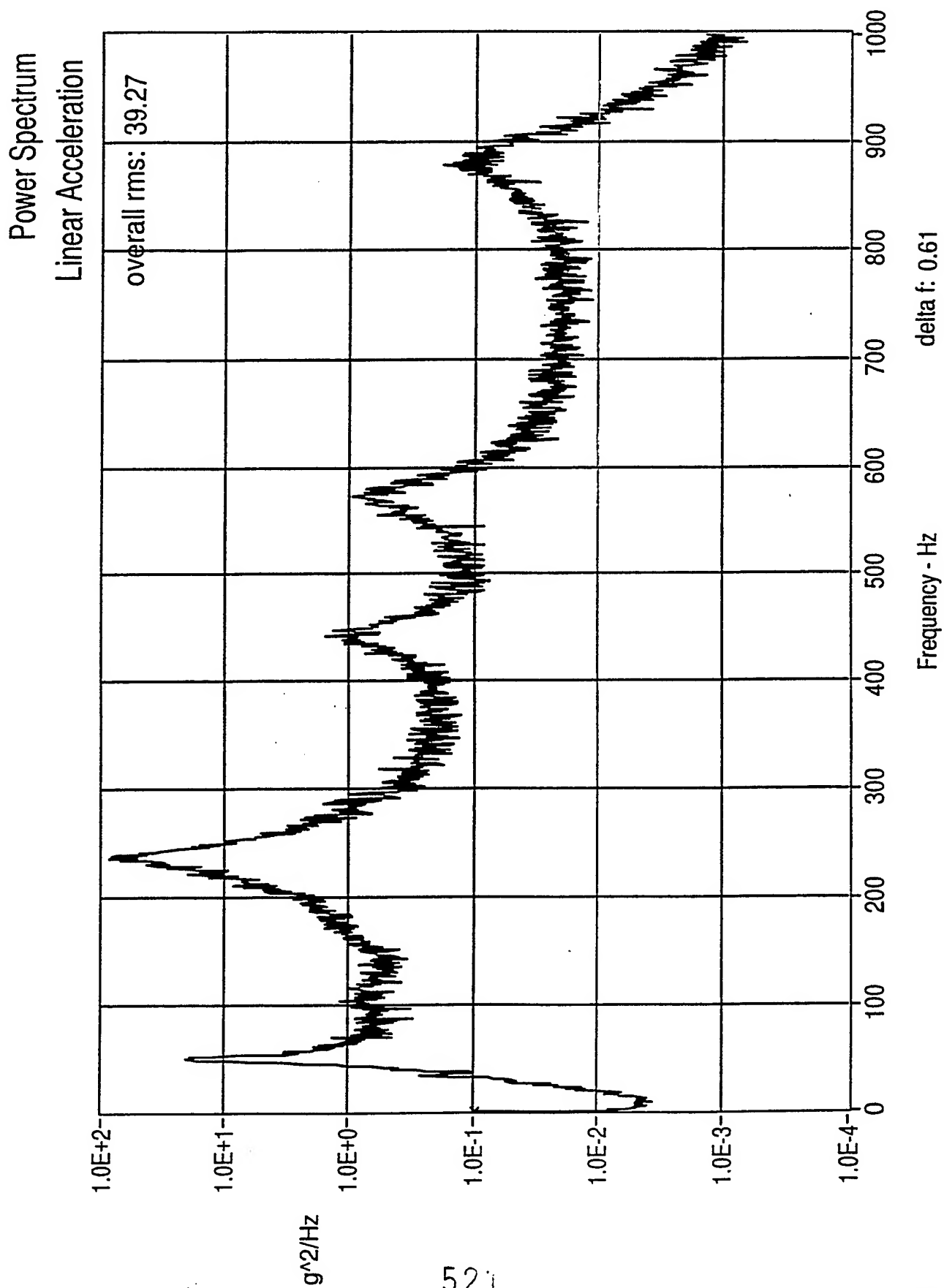


F-15 TPN\_3359: alpha=24 beta=4 bp=45

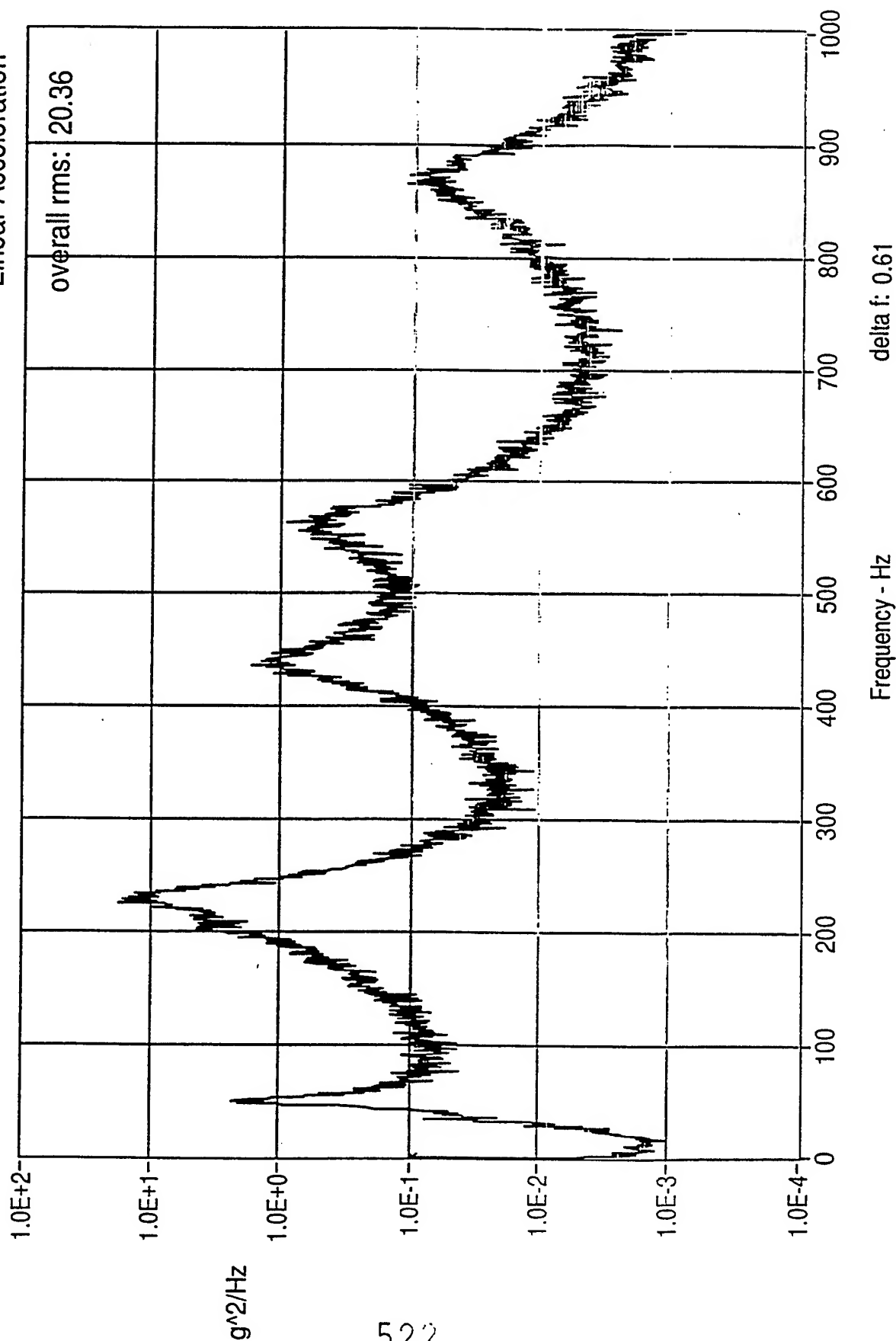
Power Spectrum  
Linear Acceleration



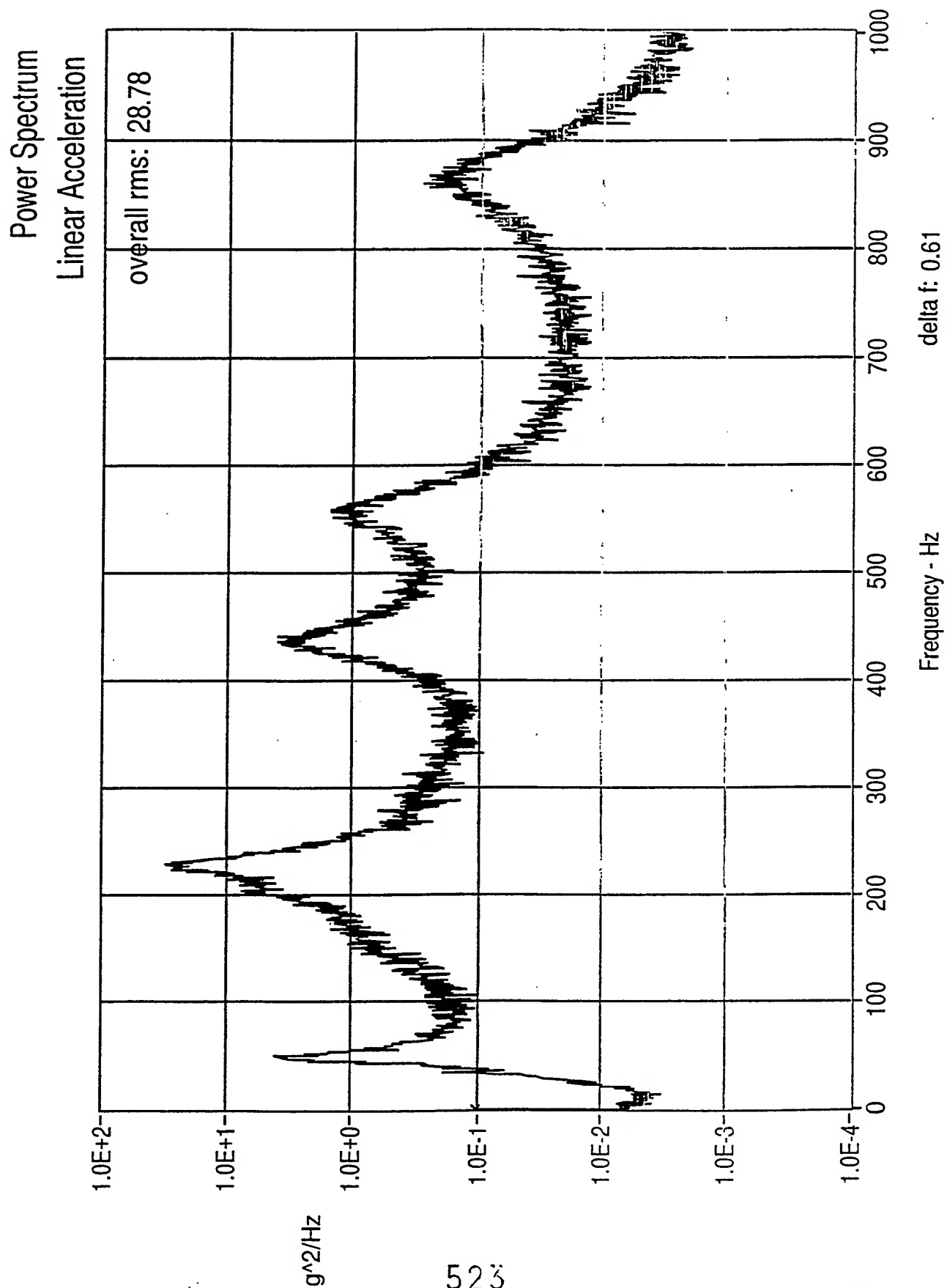
F-15 TPN\_3361: alpha=32 beta=4 bp=45



Power Spectrum  
Linear Acceleration



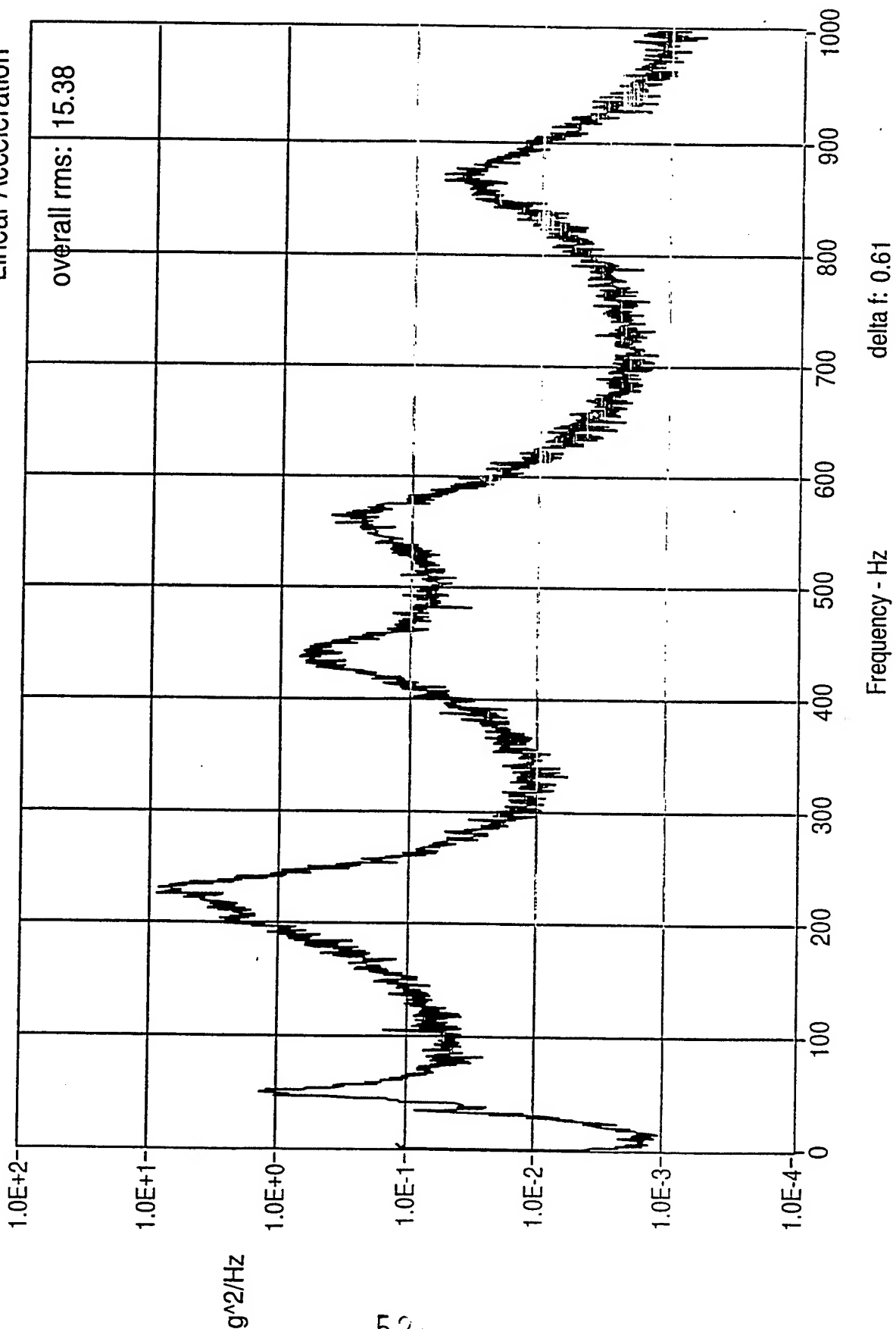
F-15 TPN\_3036: alpha=24 beta=-4 bp=65





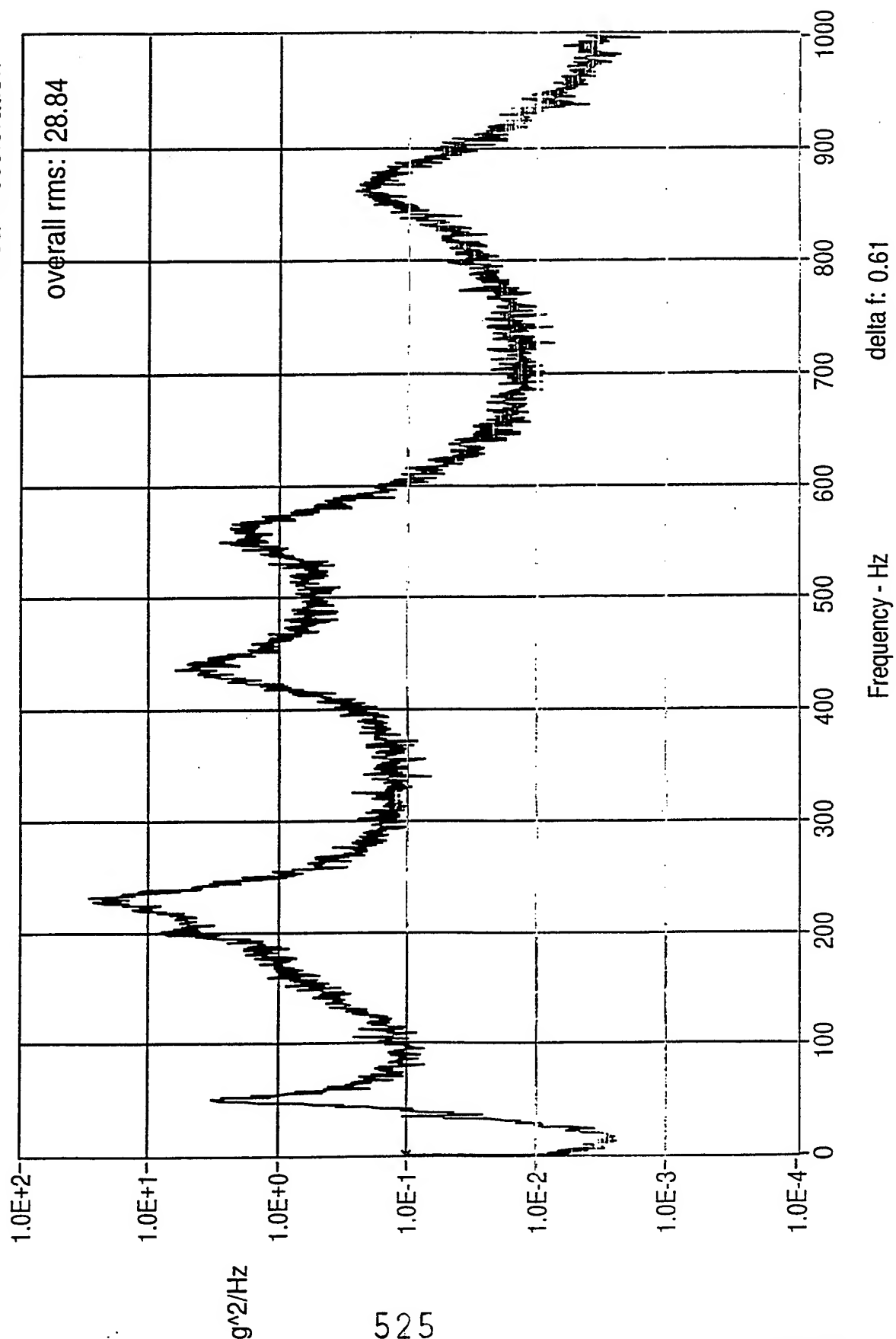
F-15 TPN\_3040: alpha=20 beta=0 bp=65

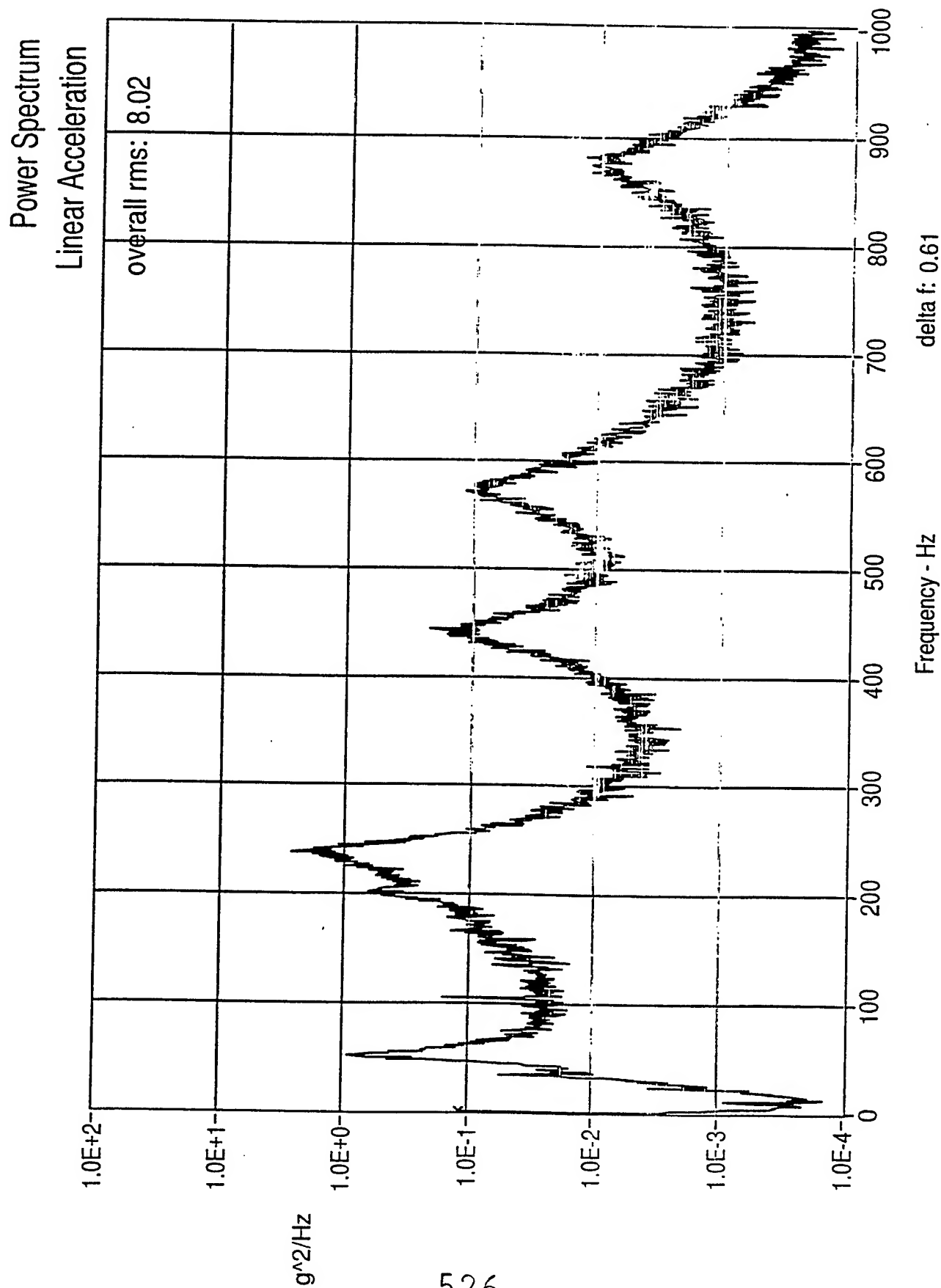
Power Spectrum  
Linear Acceleration



F-15 TPN\_3042: alpha=24 beta=0 bp=65

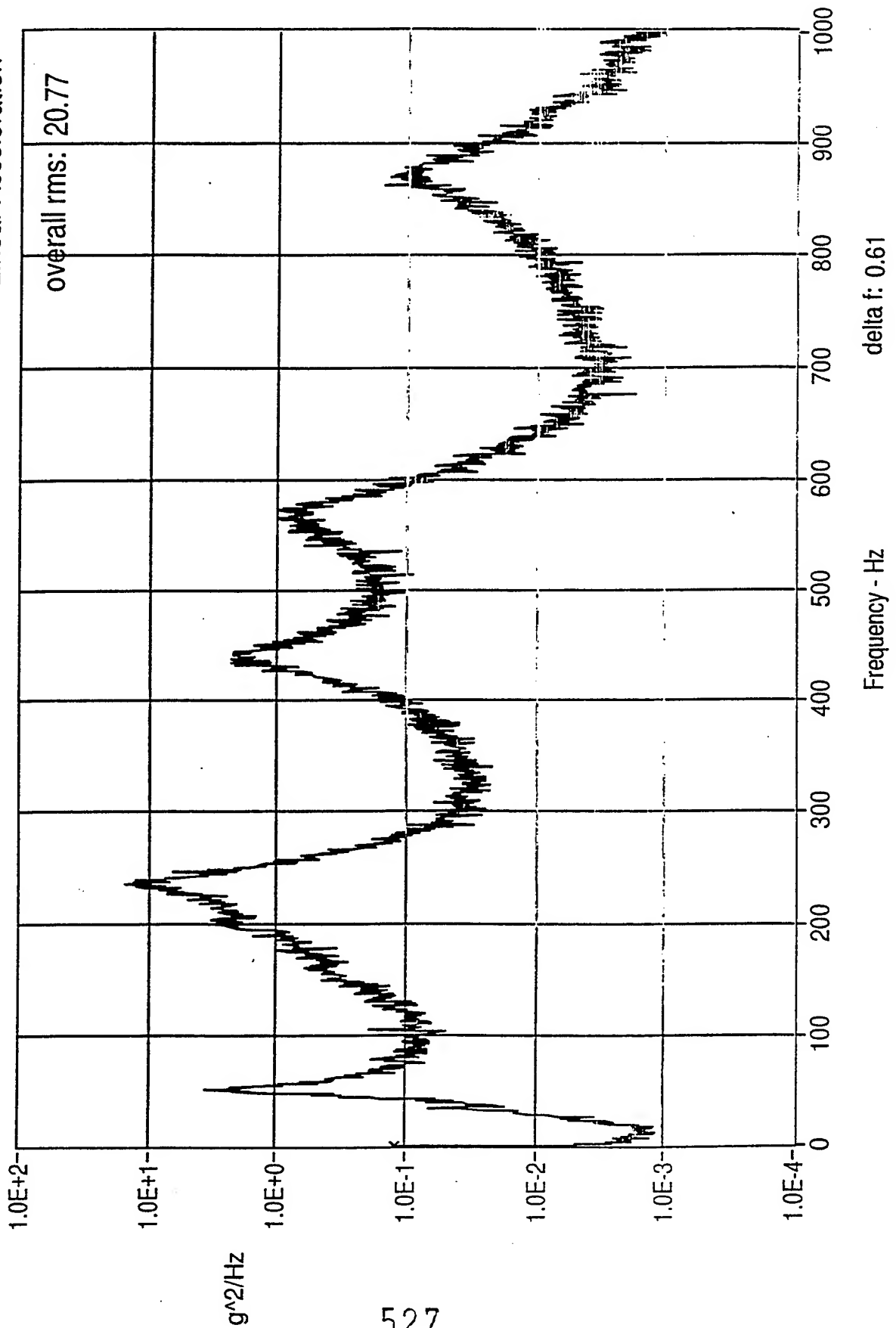
# Power Spectrum Linear Acceleration





F-15 TPN\_3048: alpha=24 beta=4 bp=65

Power Spectrum  
Linear Acceleration



**FLEXIBLE TAIL RESPONSE  
ACCELERATION DATA**

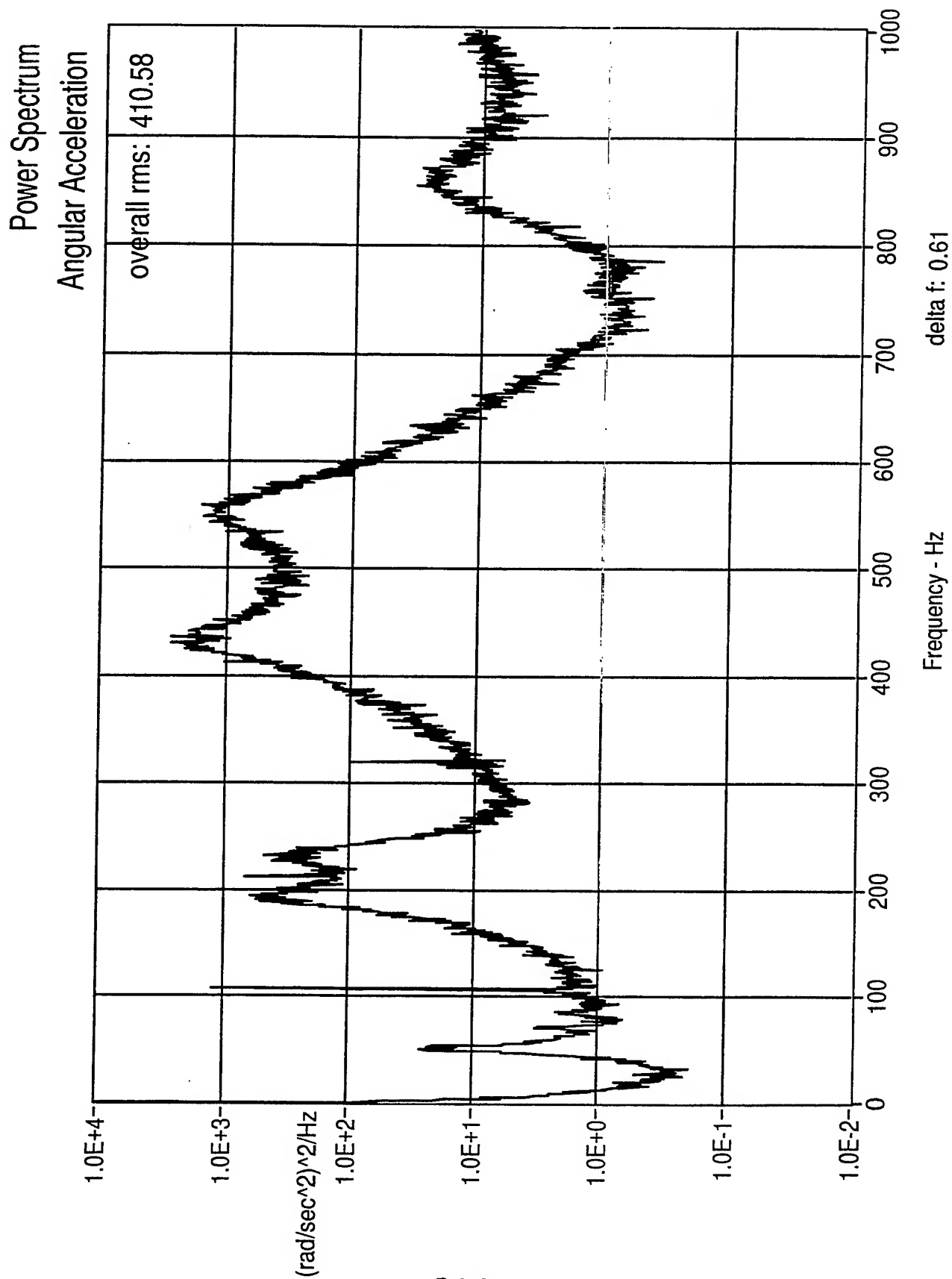
**Q= 56 PSF**

**PSD GRAPHS**

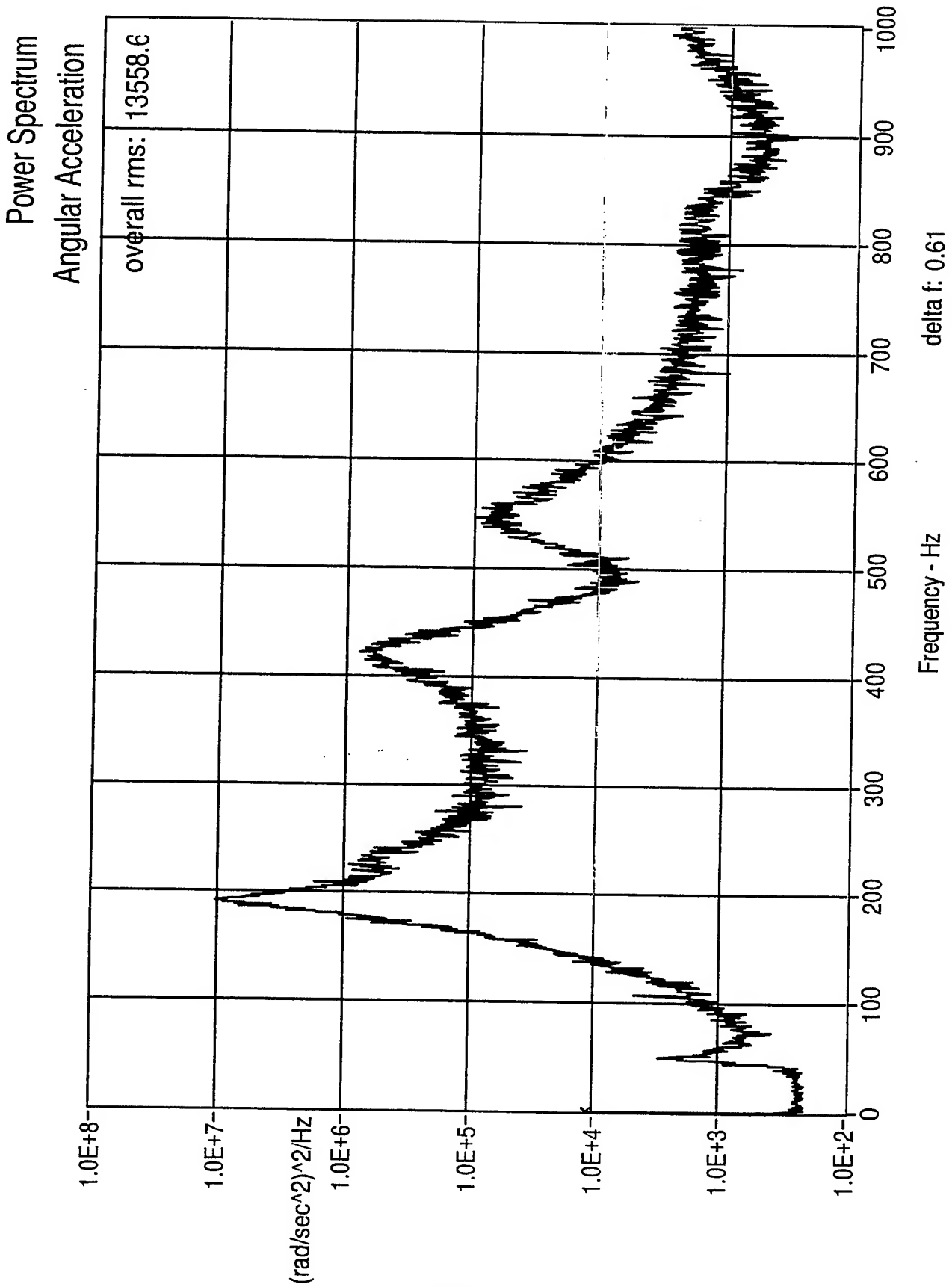
**4.1.1.3 TORSIONAL (ANGULAR AT EA) beta= 0, +4, -4 Deg, WBP = 0, 45, 65 psi  
ALPHAS = 8, 20, 24, 32 DEG**

**data is further blocked blocked off by blowing pressures, with beta variation within.**

F-15 TPN\_2864: alpha=8 beta=-4 bp=0

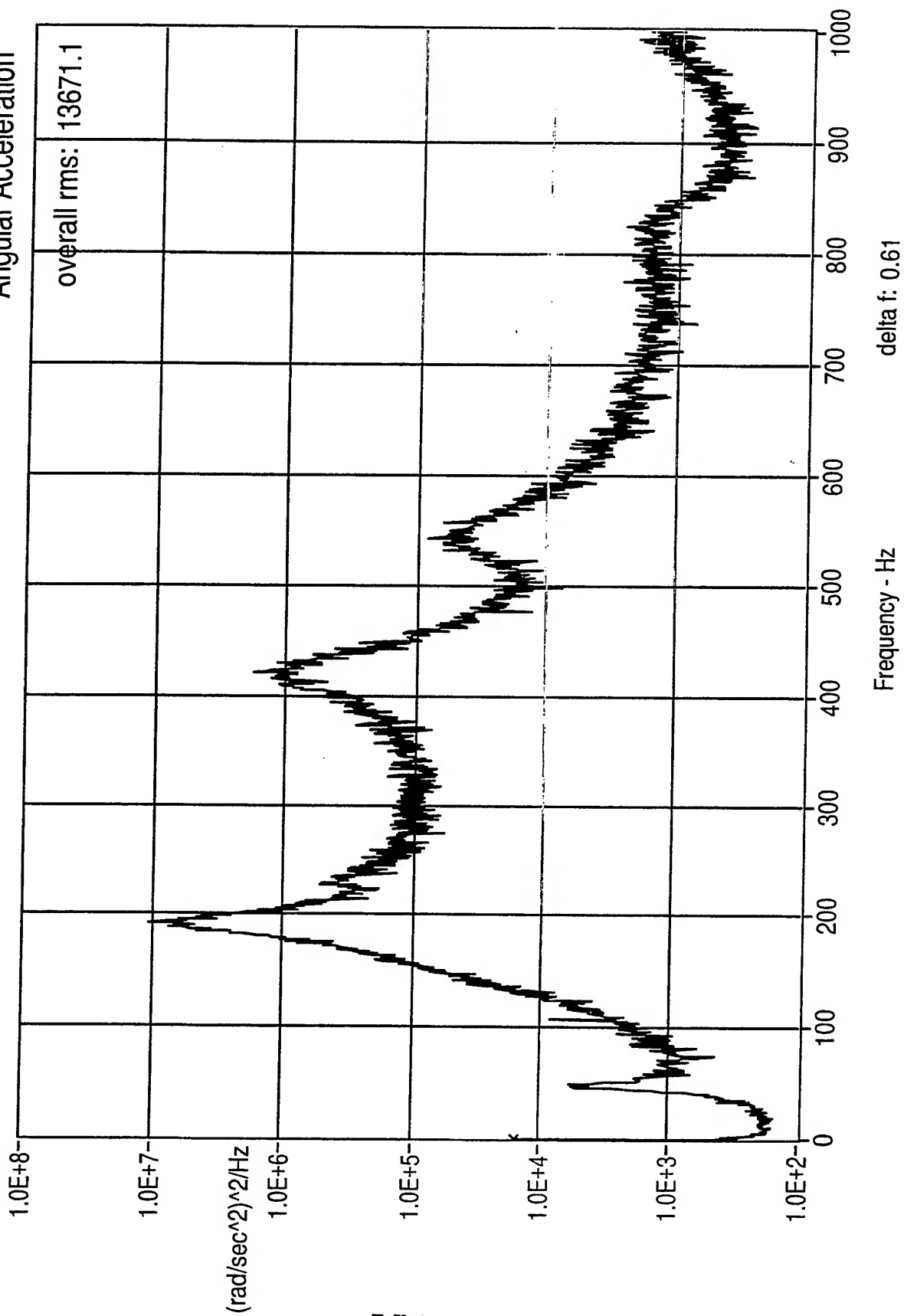


F-15 TPN\_2870: alpha=20 beta=-4 bp=0



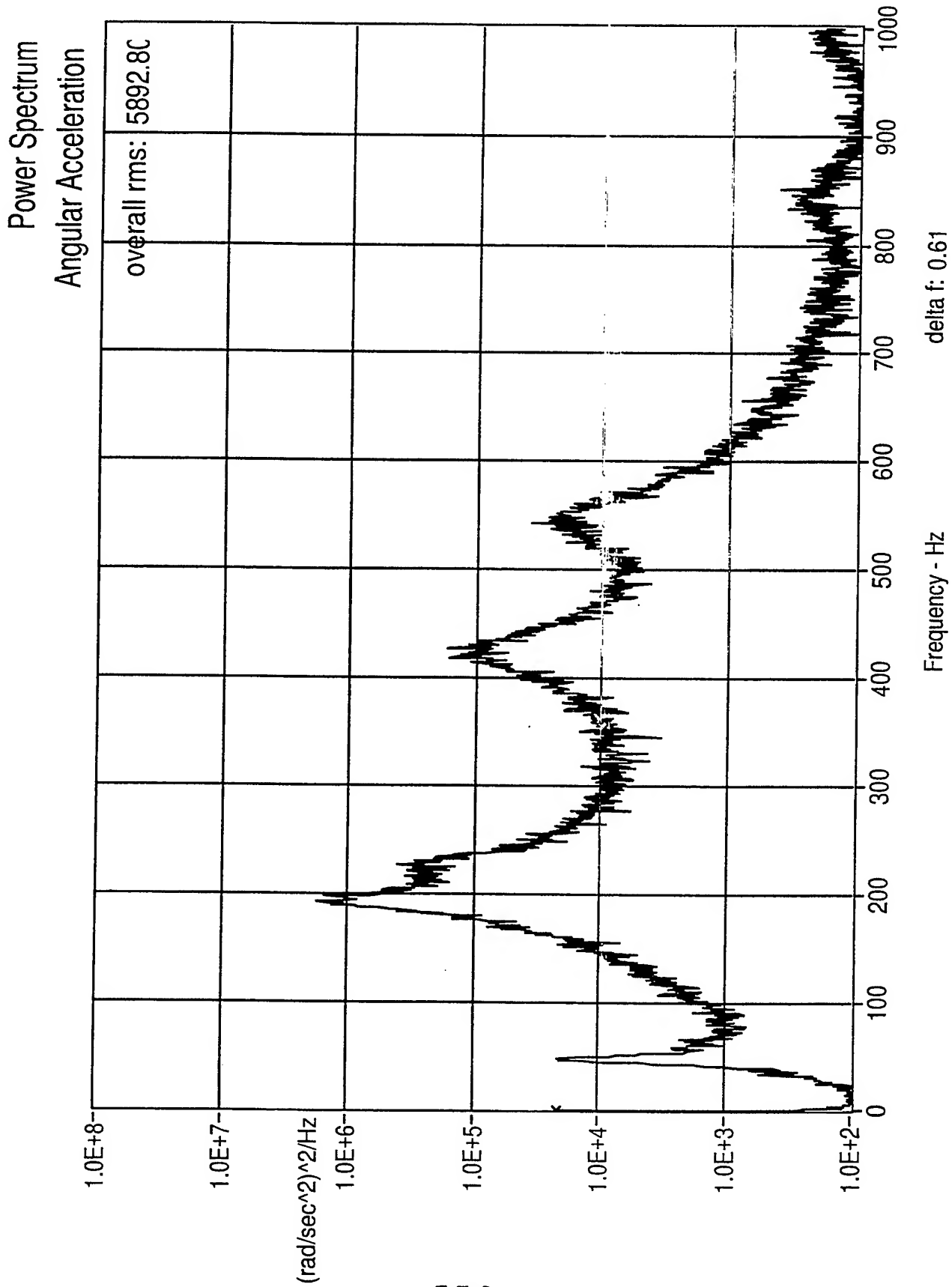
F-15 TPN\_2872: alpha=24 beta=-4 bp=0

Power Spectrum  
Angular Acceleration

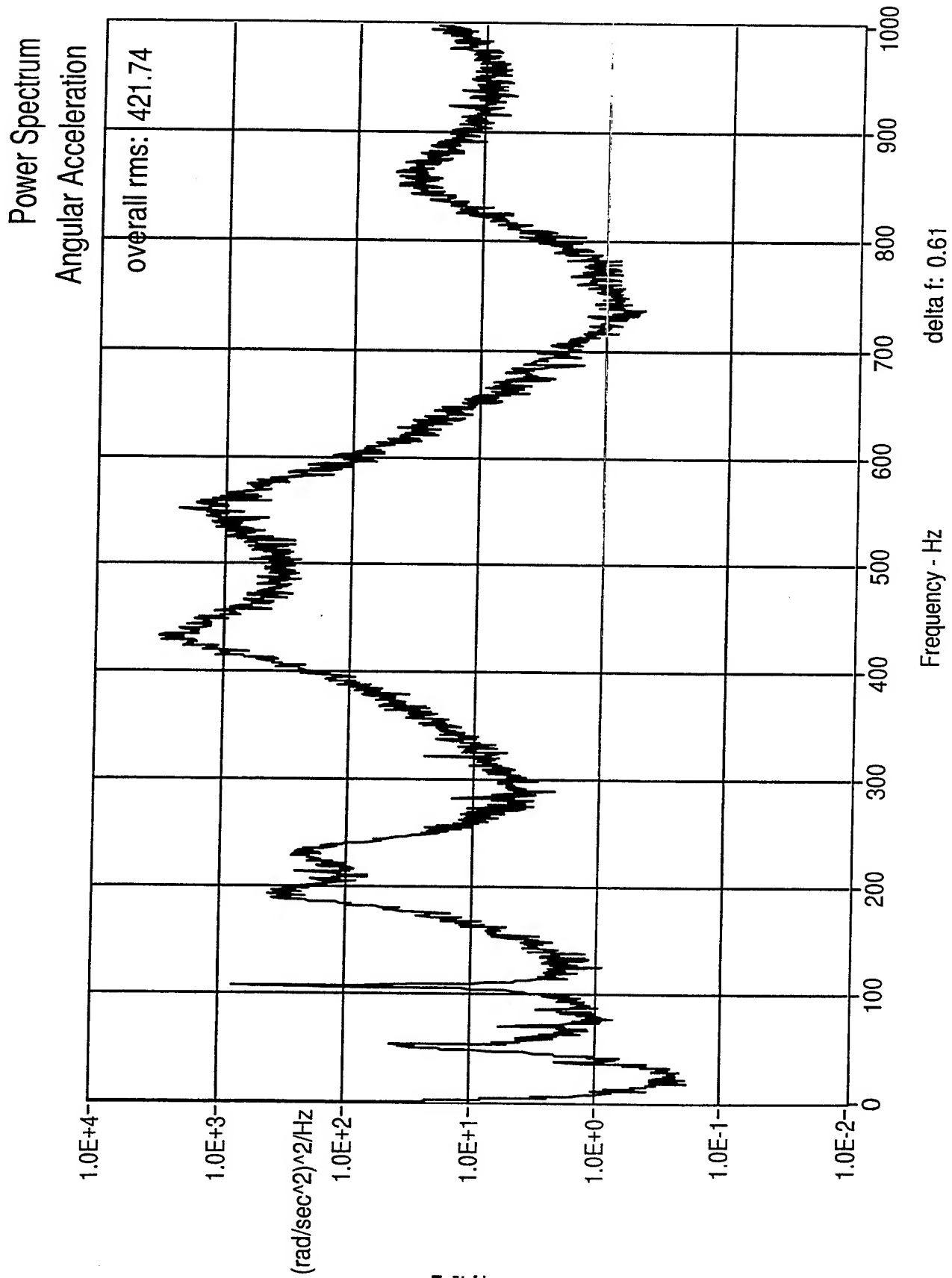




F-15 TPN\_2874: alpha=32 beta=-4 bp=0

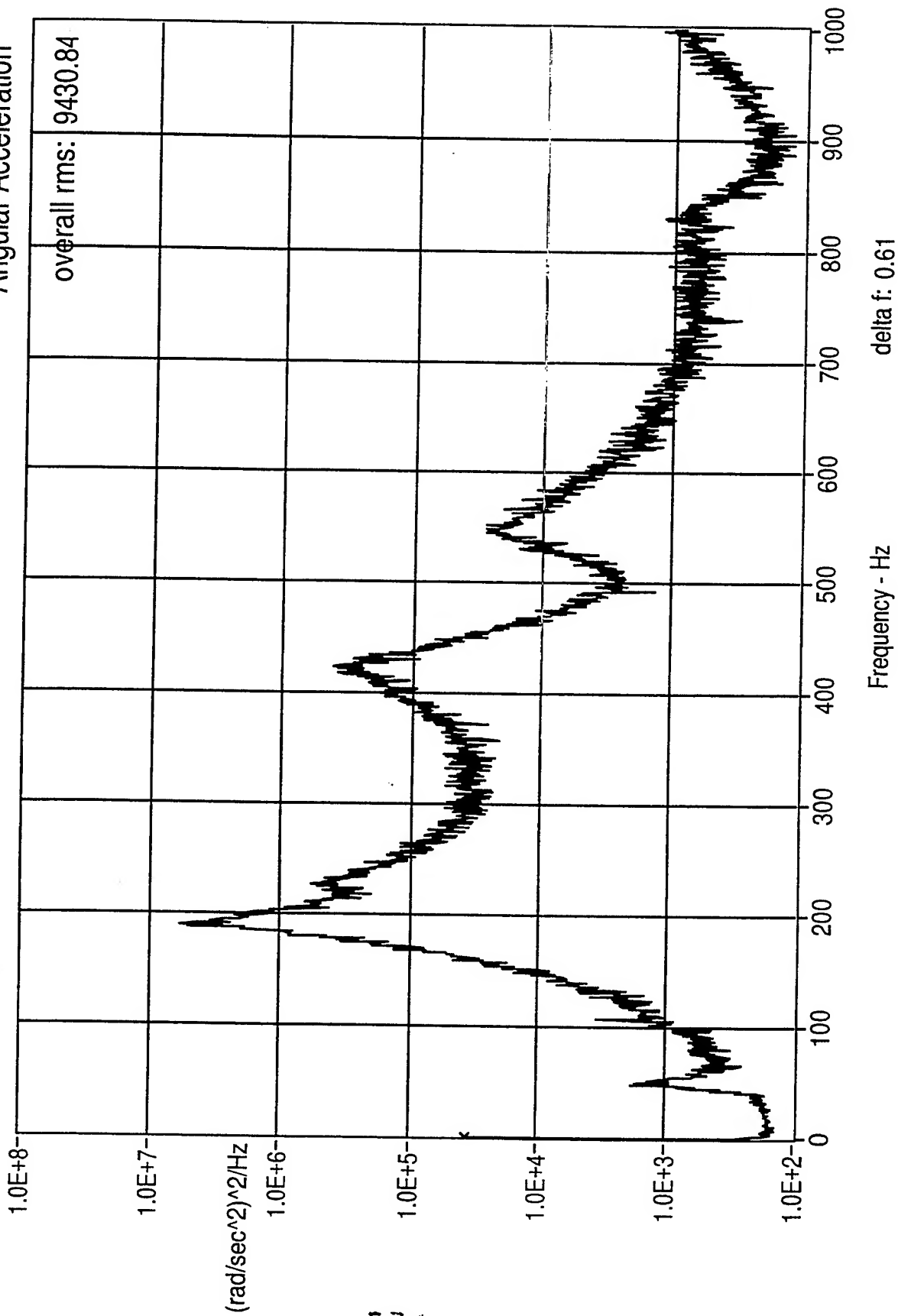


F-15 TPN\_2844: alpha=8 beta=0 bp=0

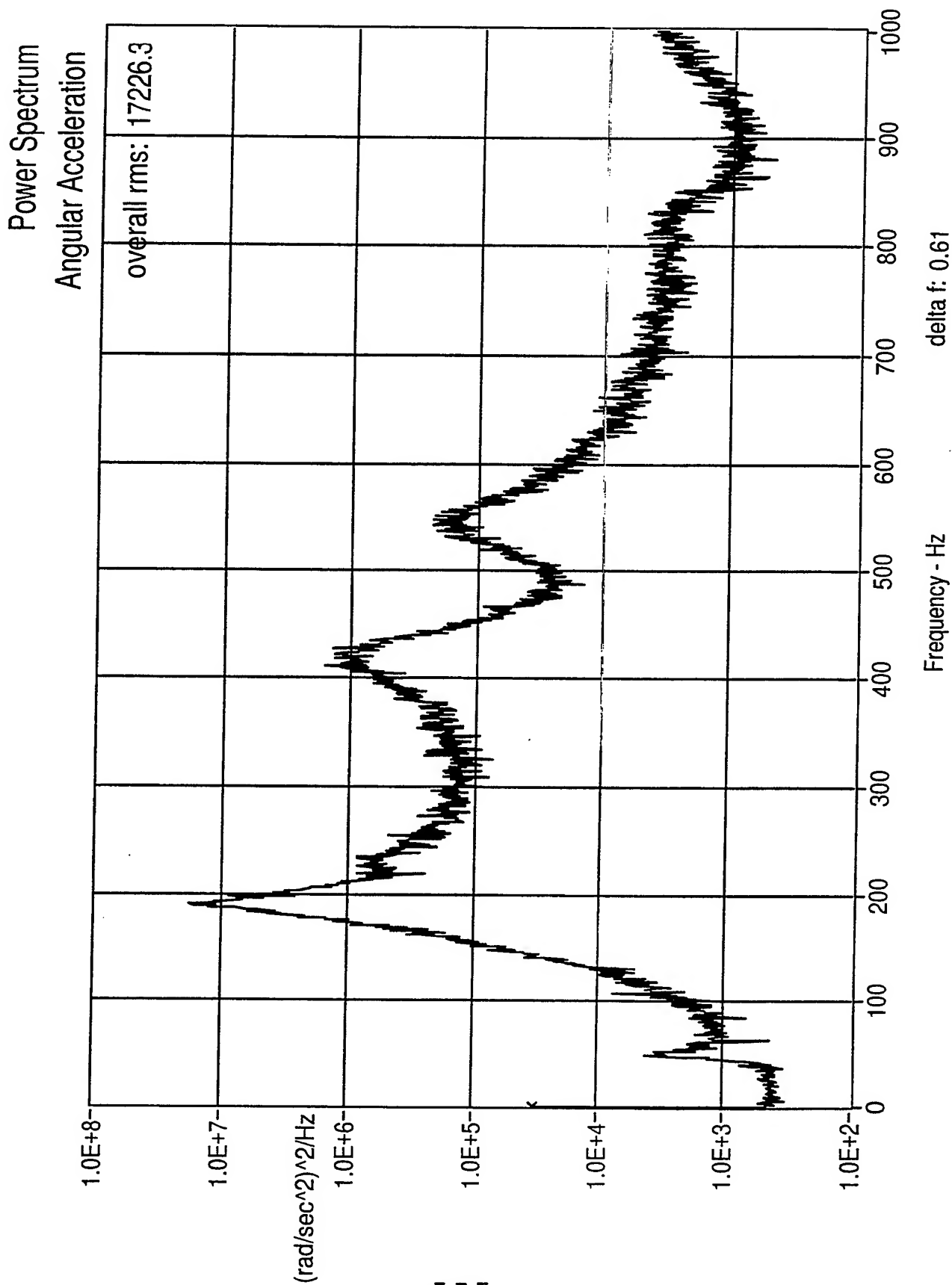


F-15 TPN\_2850: alpha=20 beta=0 bp=0

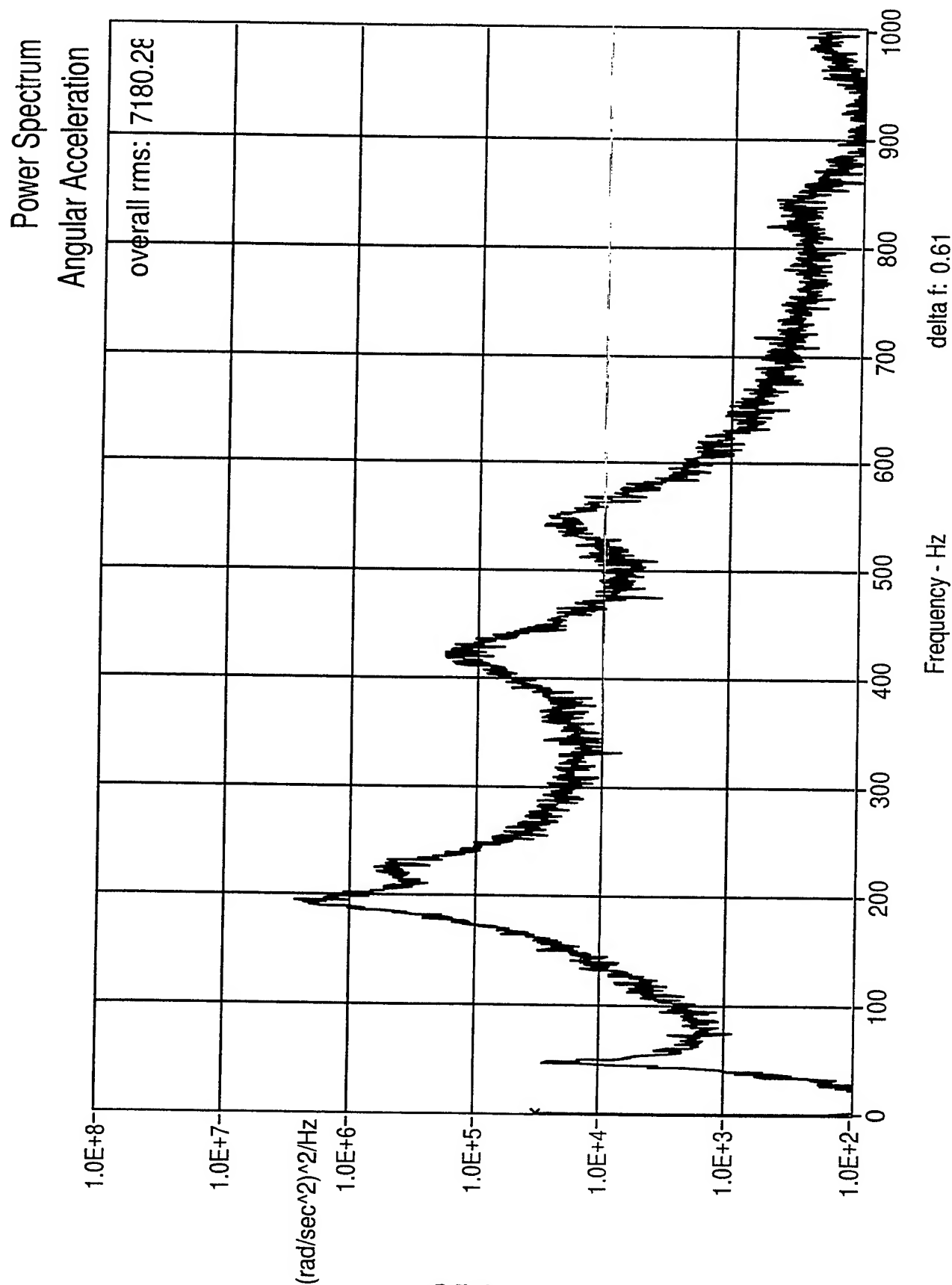
Power Spectrum  
Angular Acceleration



F-15 TPN\_2852: alpha=24 beta=0 bp=0

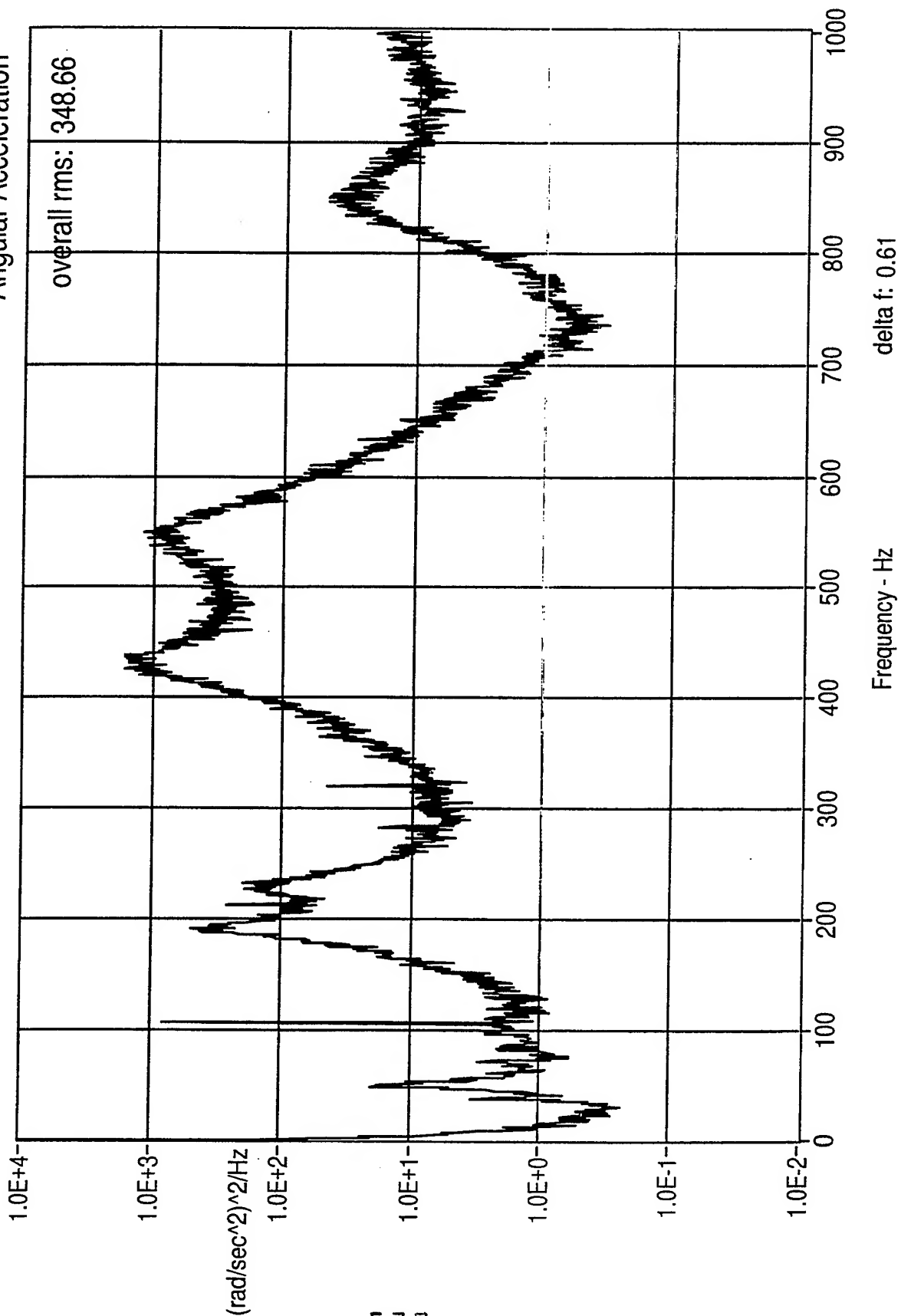


F-15 TPN\_2854: alpha=32 beta=0 bp=0

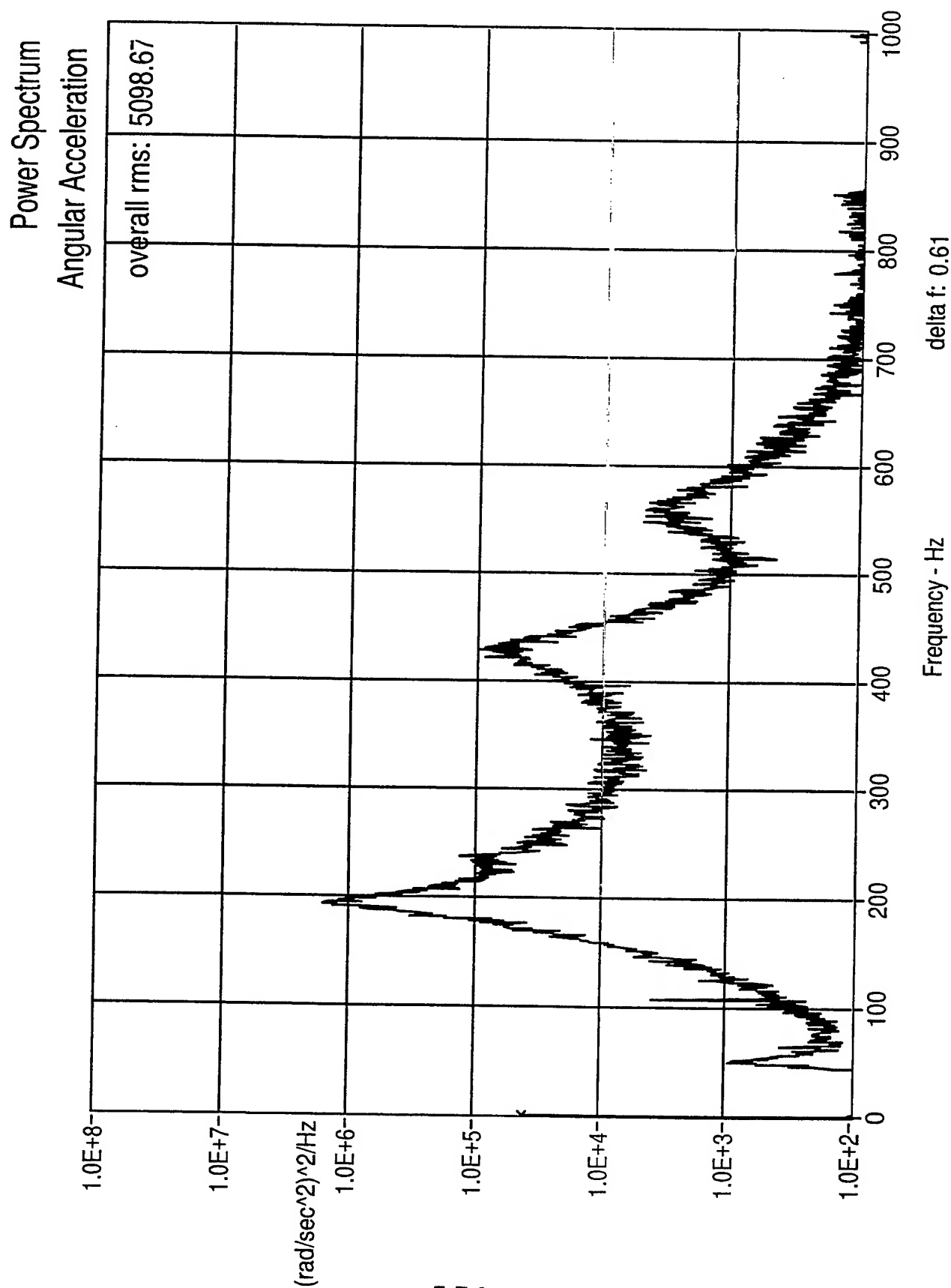


F-15 TPN\_2918: alpha=8 beta=4 bp=0

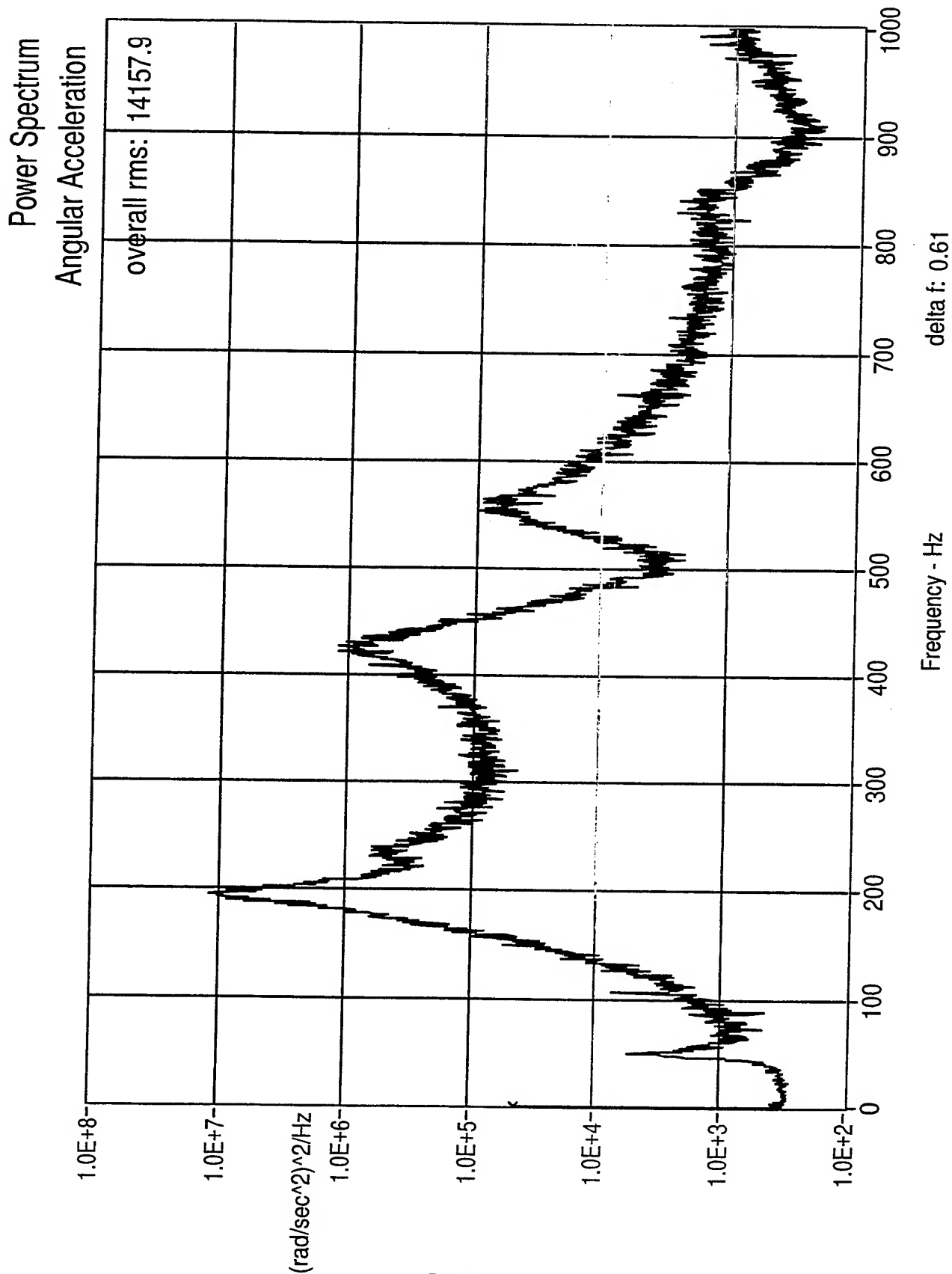
Power Spectrum  
Angular Acceleration



F-15 TPN\_2924: alpha=20 beta=4 bp=0

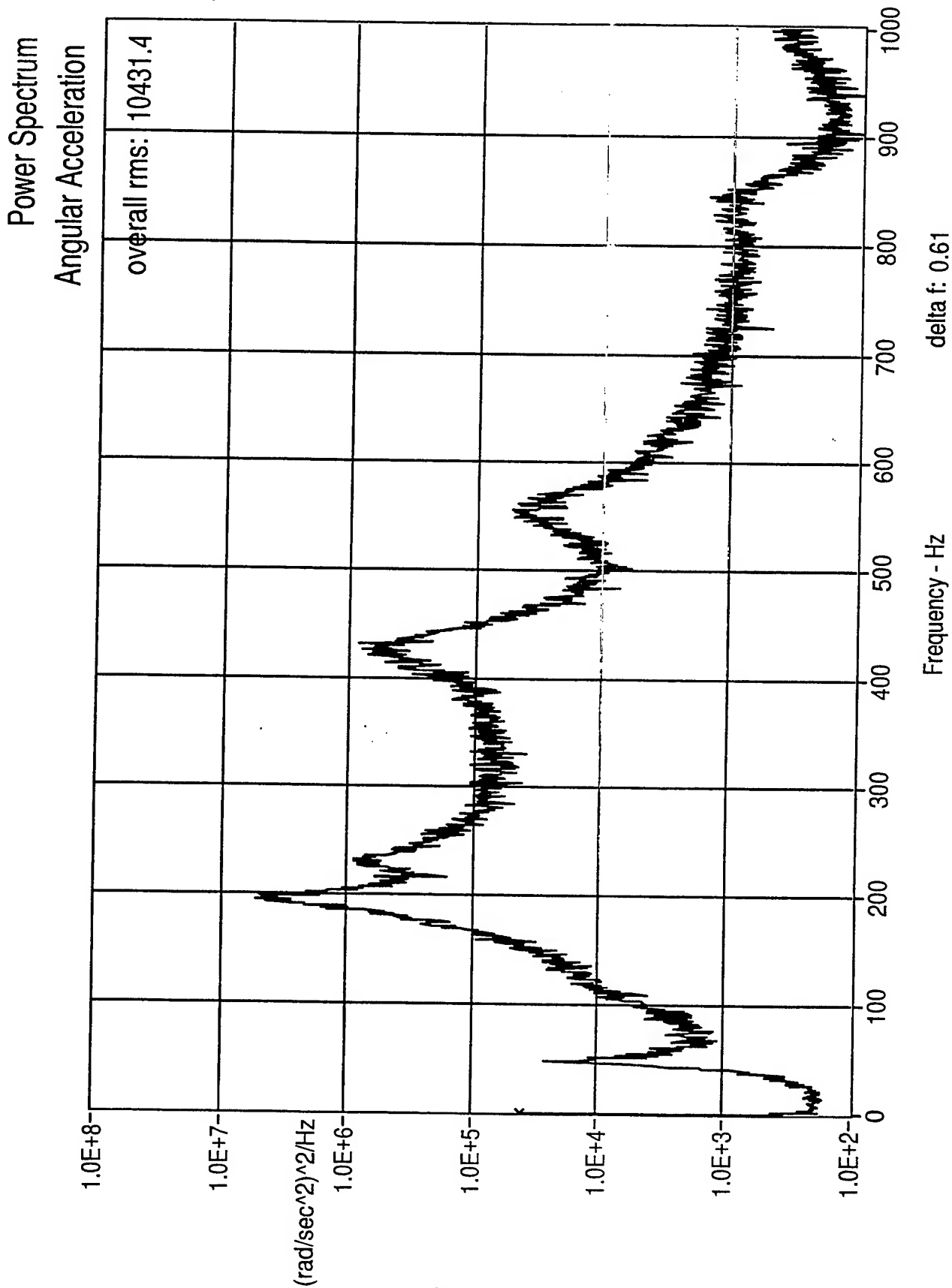


F-15 TPN\_2926: alpha=24 beta=4 bp=0

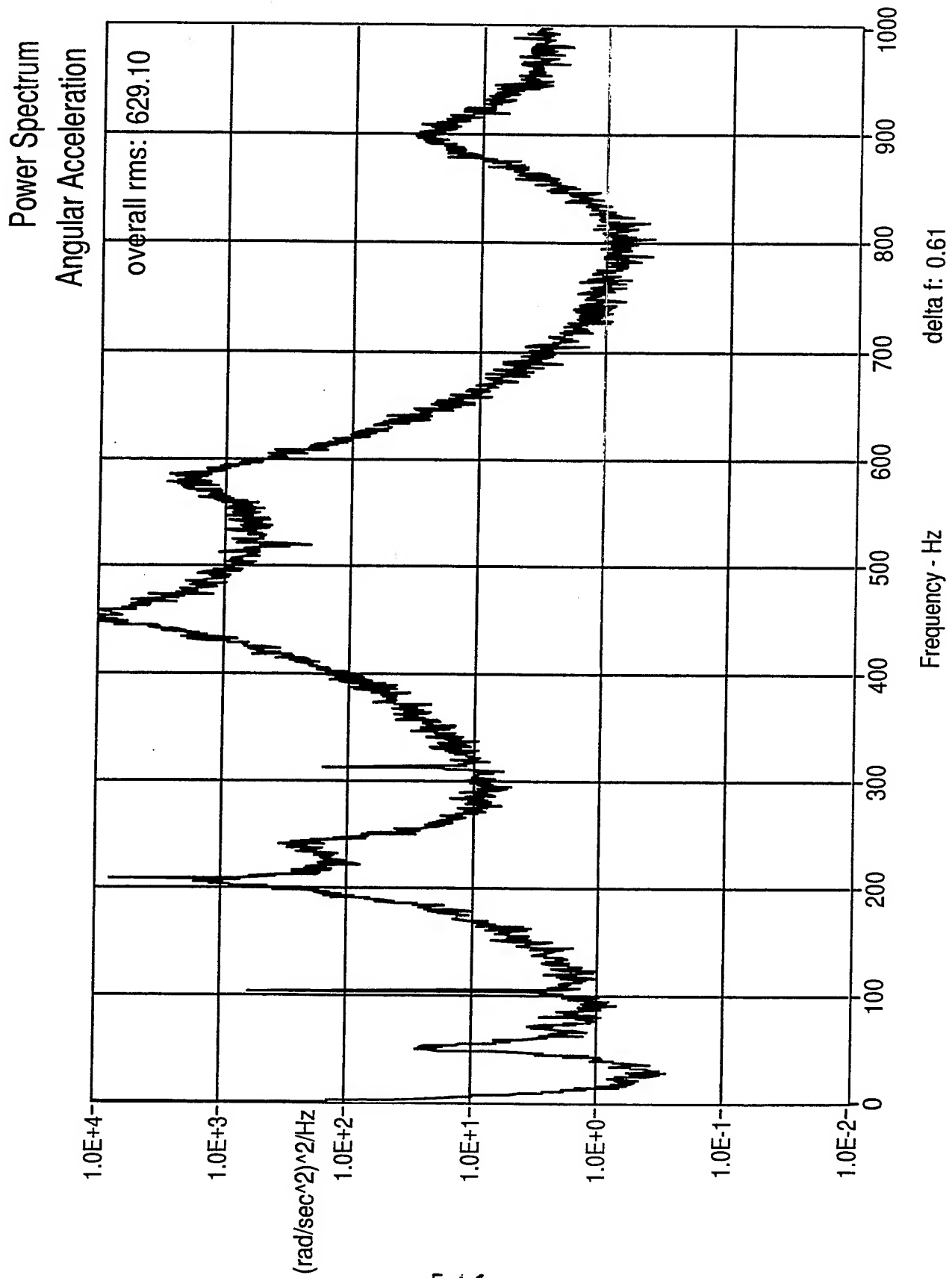




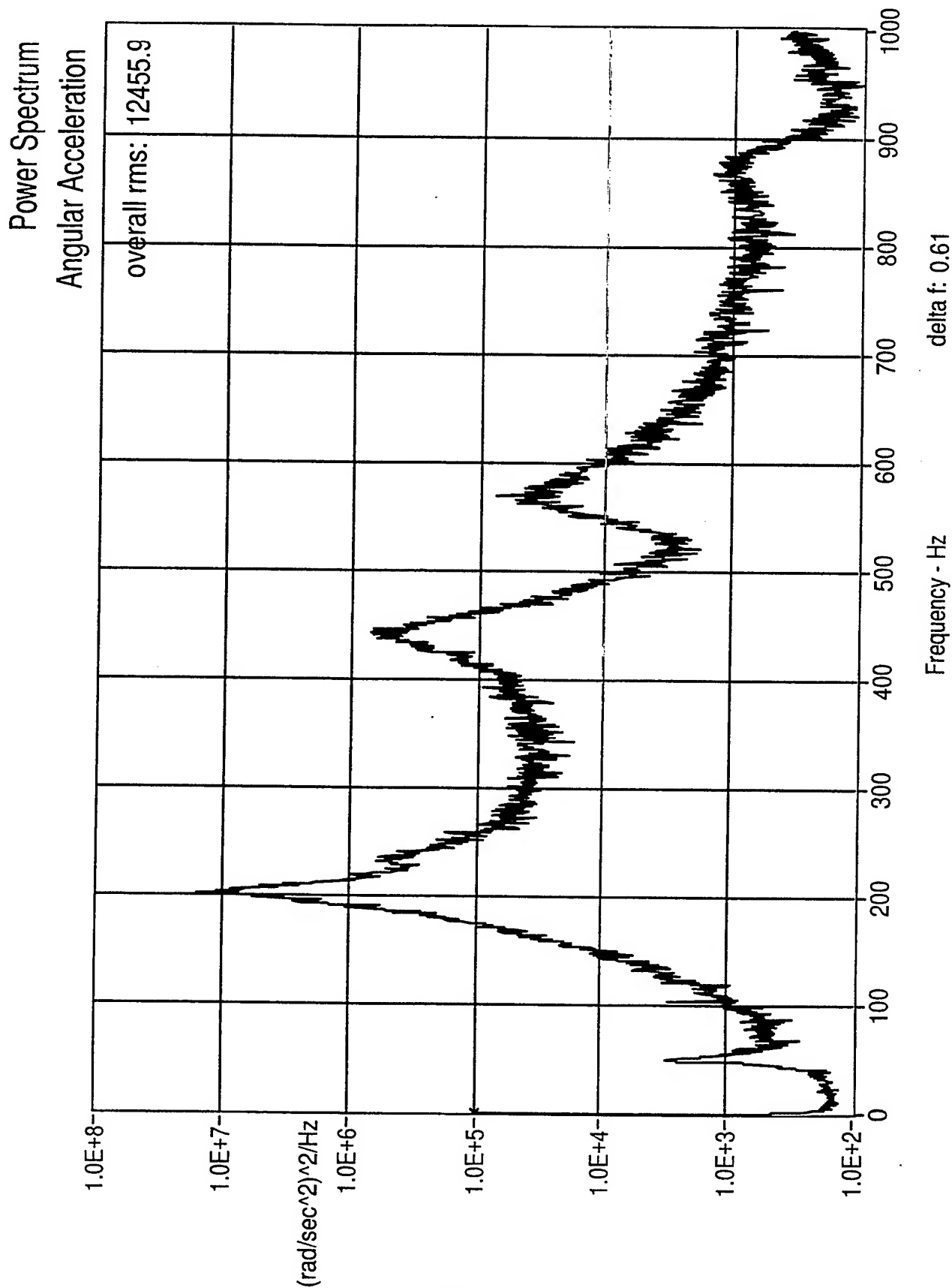
F-15 TPN\_2928: alpha=32 beta=4 bp=0



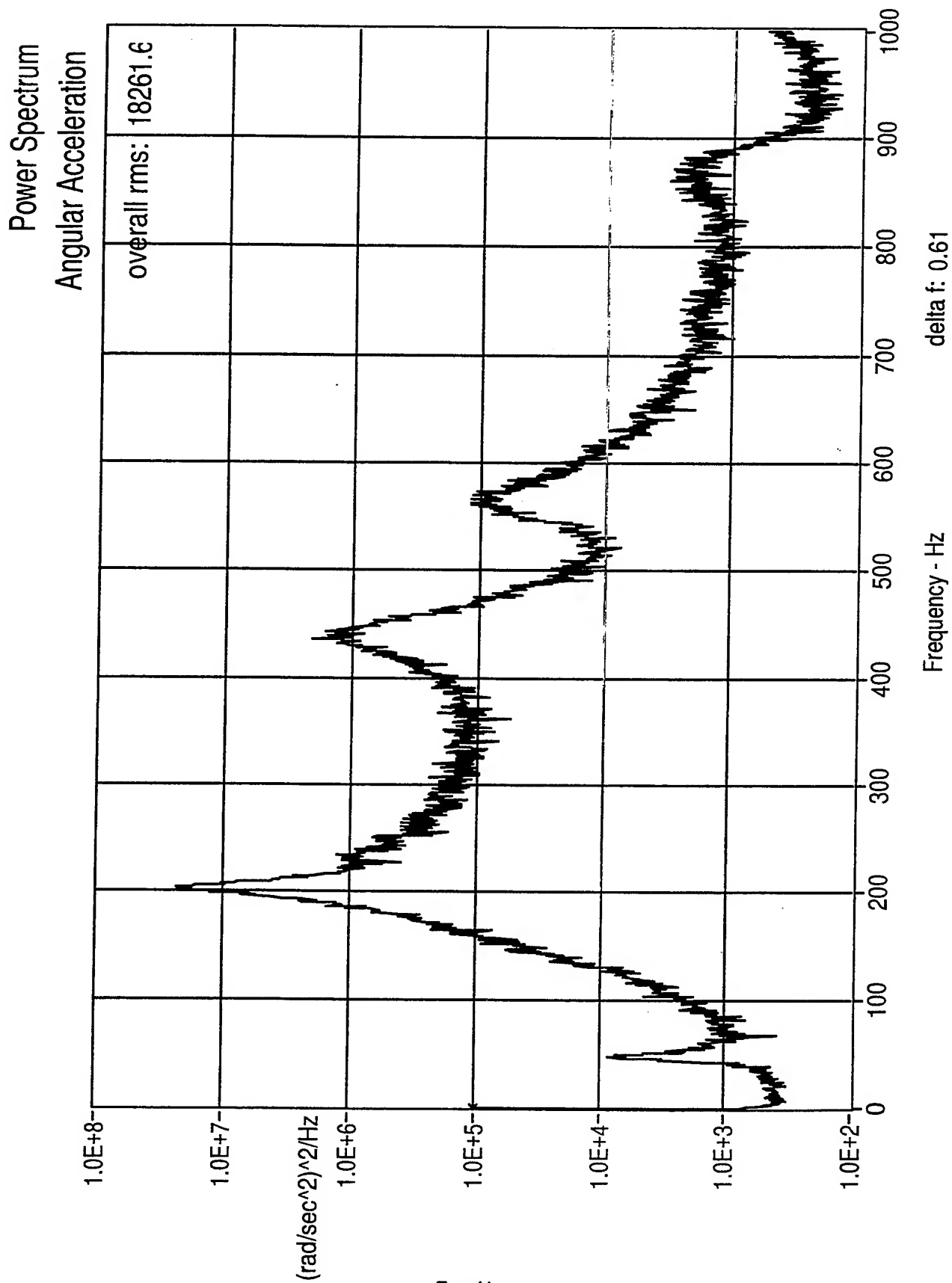
F-15 TPN\_3369: alpha=8 beta=-4 bp=45



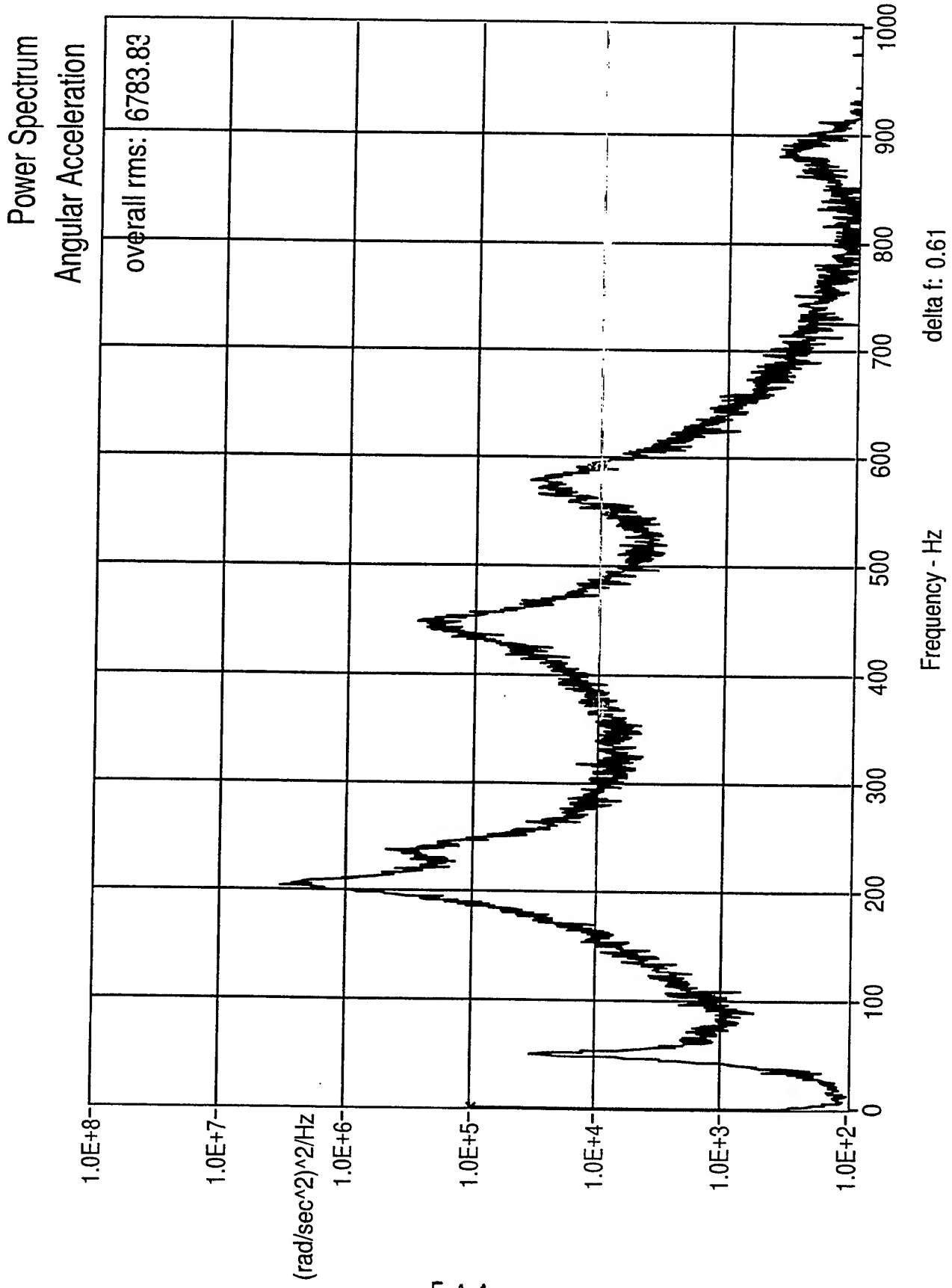
F-15 TPN\_3375: alpha=20 beta=-4 bp=45



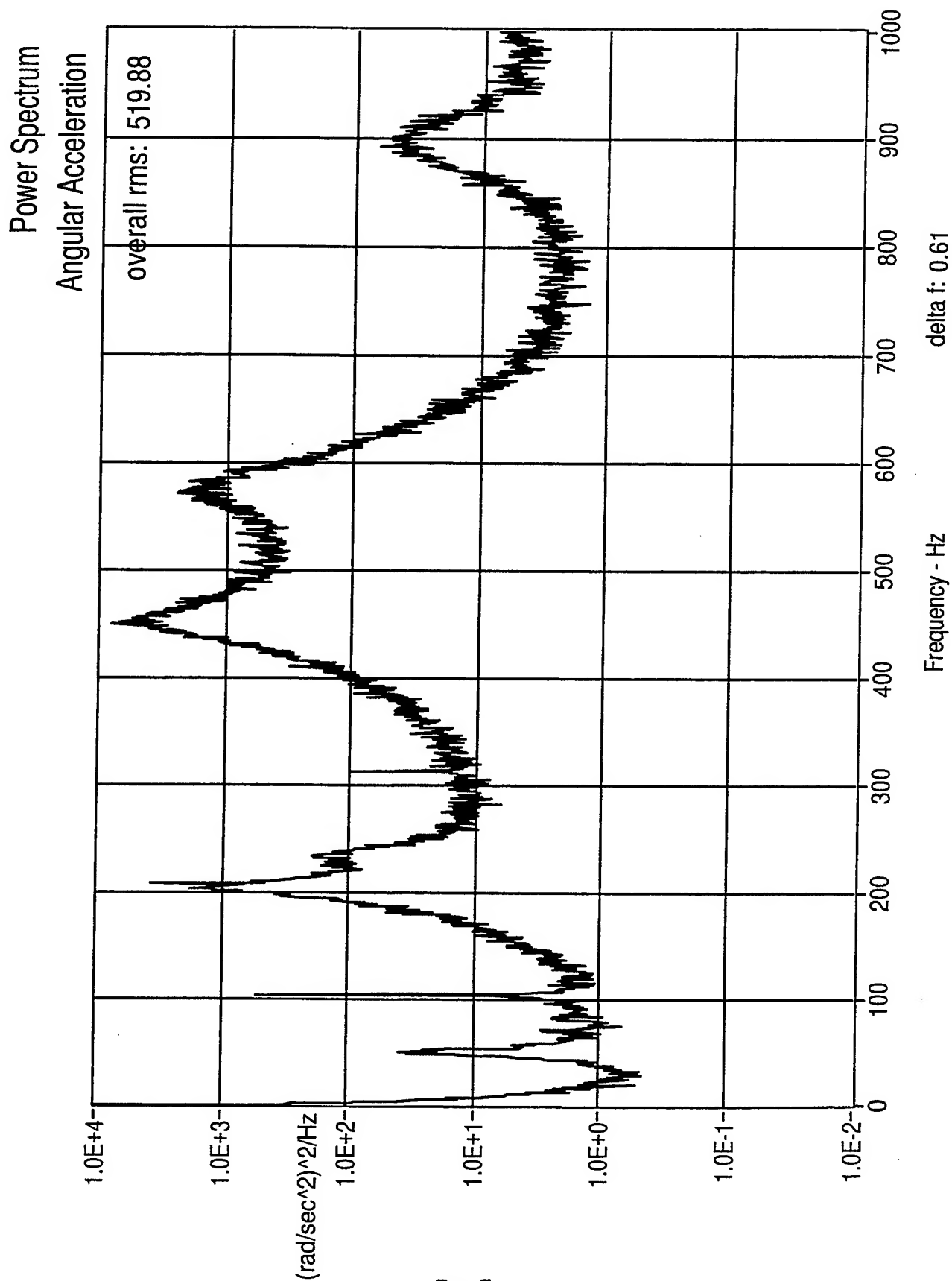
F-15 TPN\_3377: alpha=24 beta=-4 bp=45



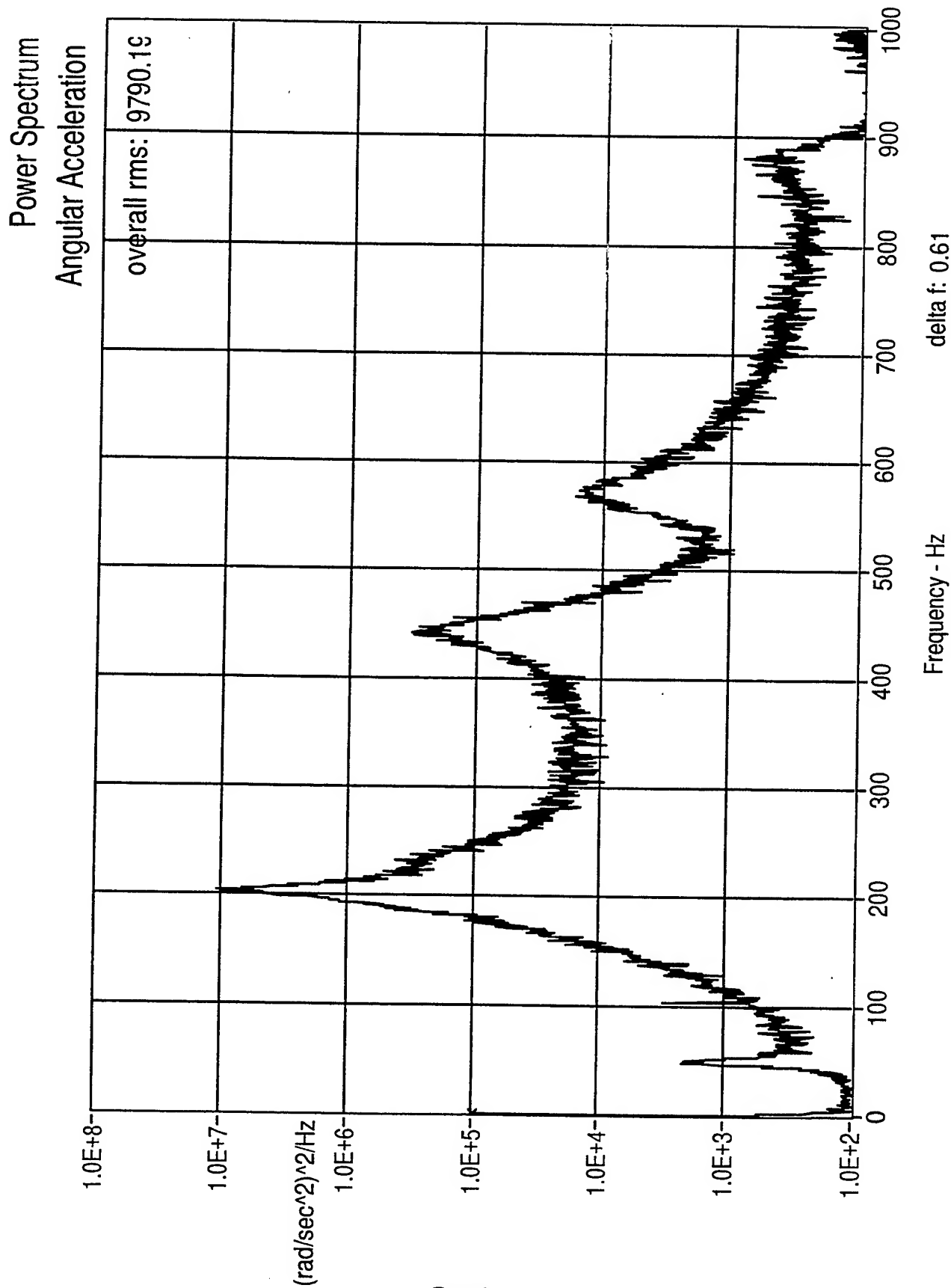
F-15 TPN\_3379: alpha=32 beta=-4 bp=45



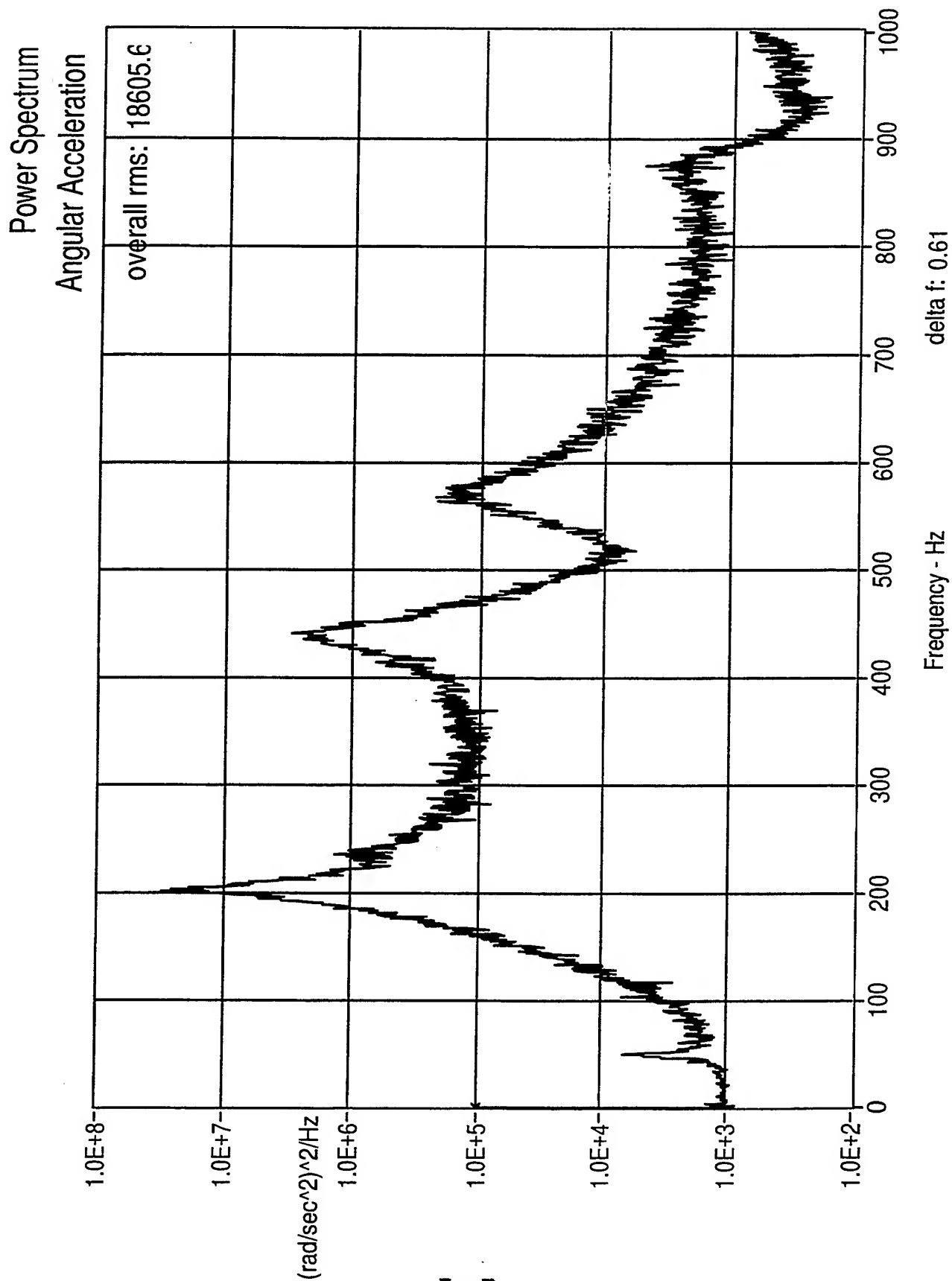
F-15 TPN\_3333: alpha=8 beta=0 bp=45



F-15 TPN\_3339: alpha=20 beta=0 bp=45

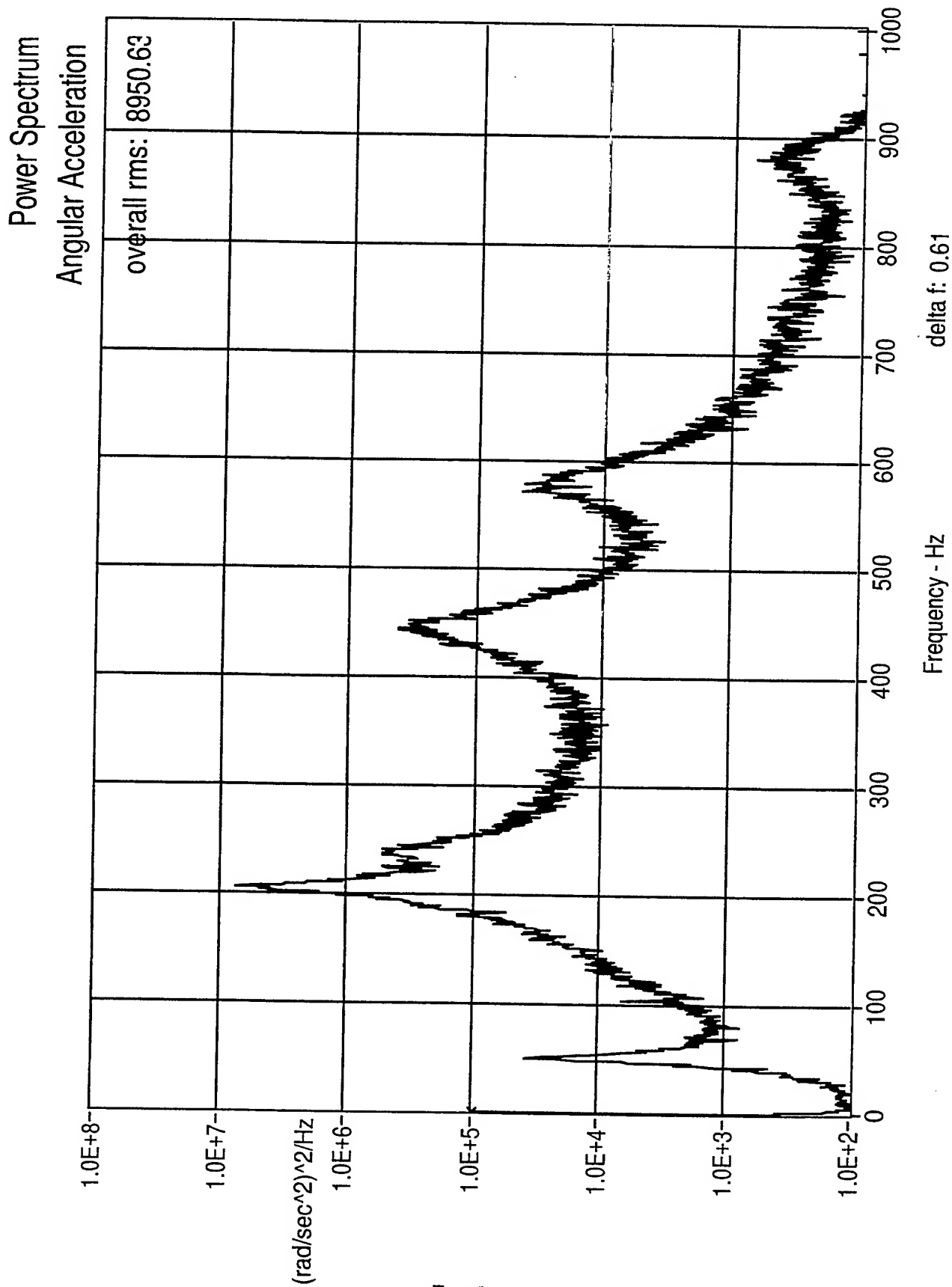


F-15 TPN\_3341: alpha=24 beta=0 bp=45

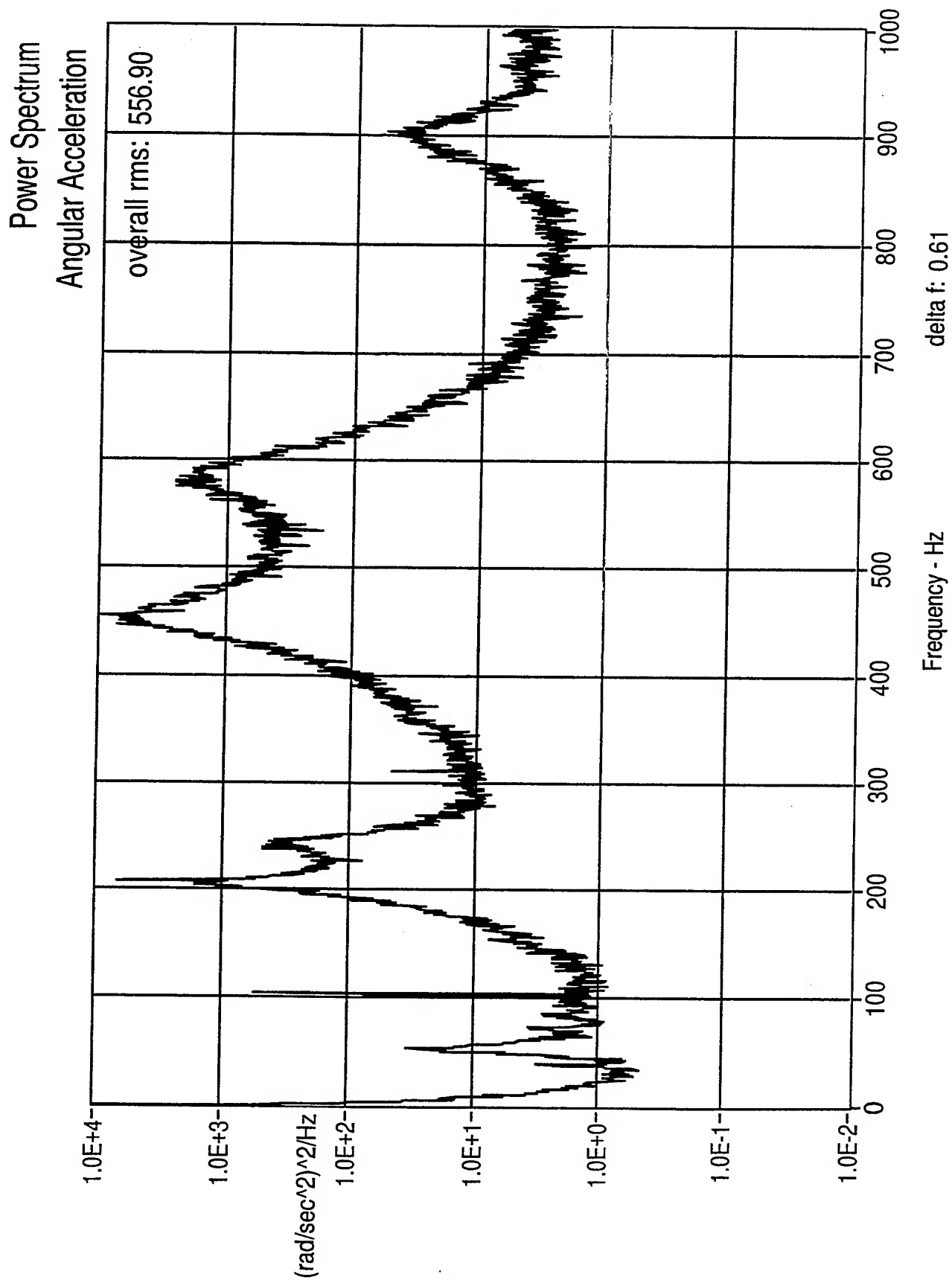


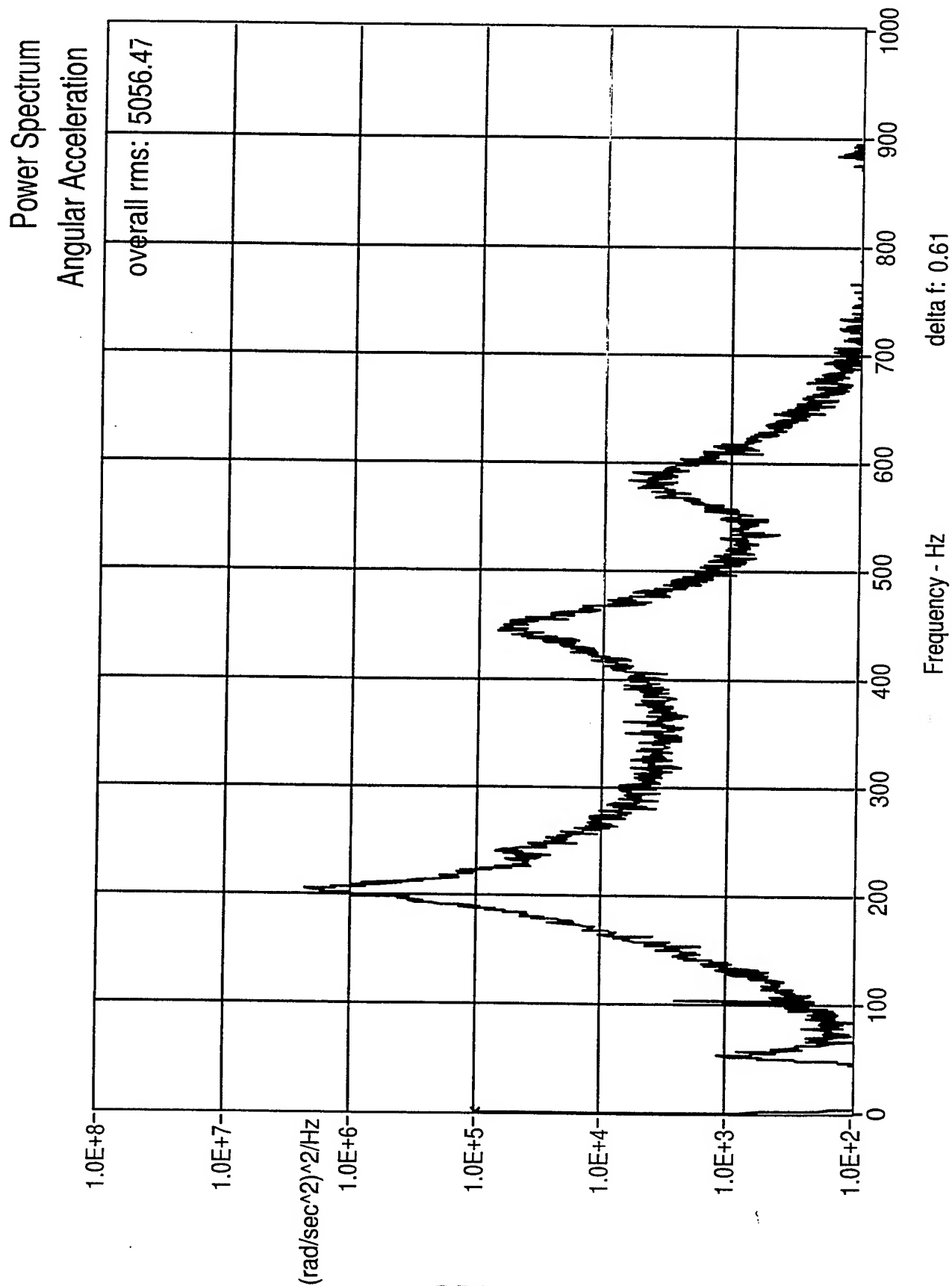


F-15 TPN\_3343: alpha=32 beta=0 bp=45

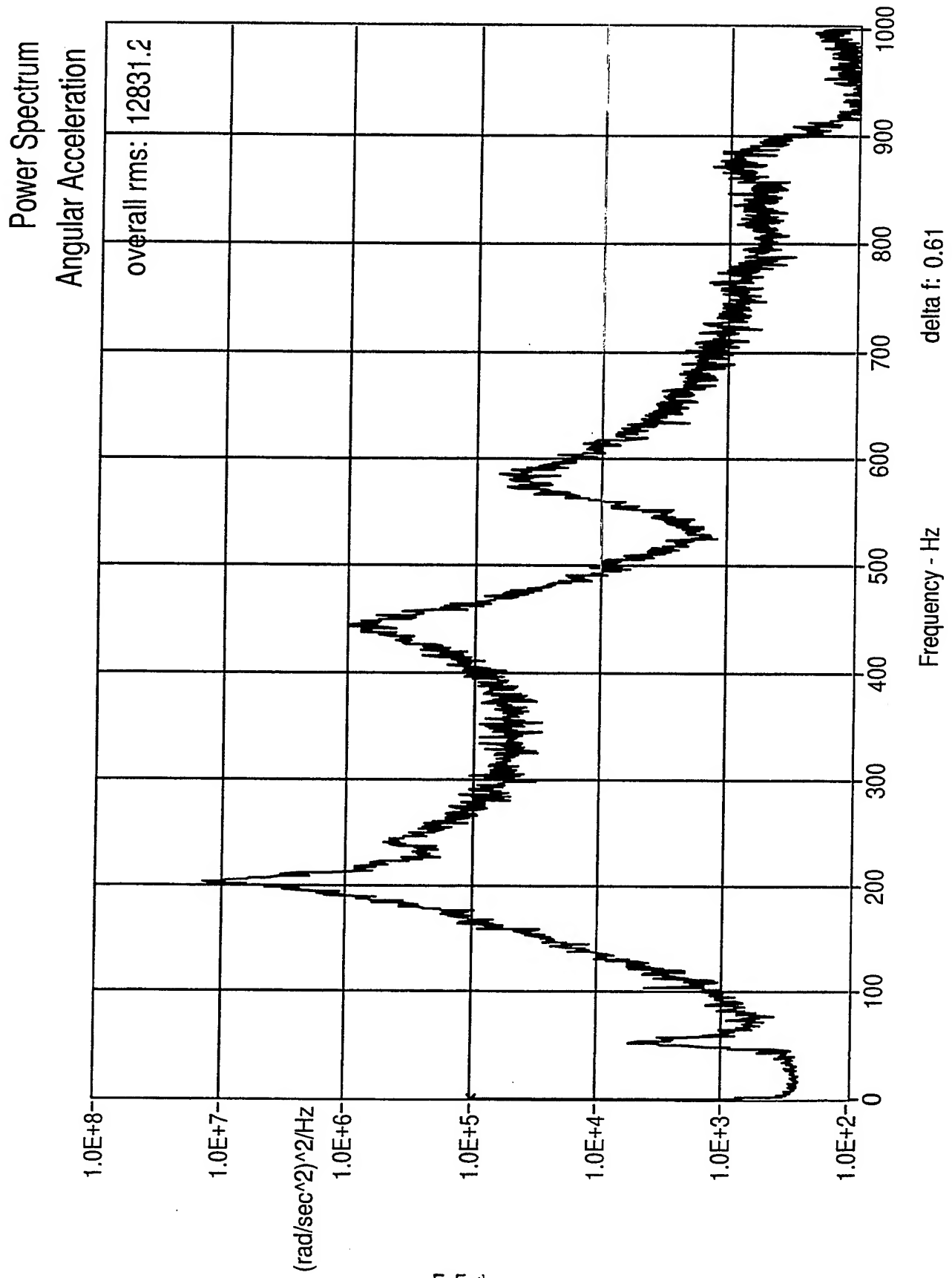


F-15 TPN\_3351: alpha=8 beta=4 bp=45

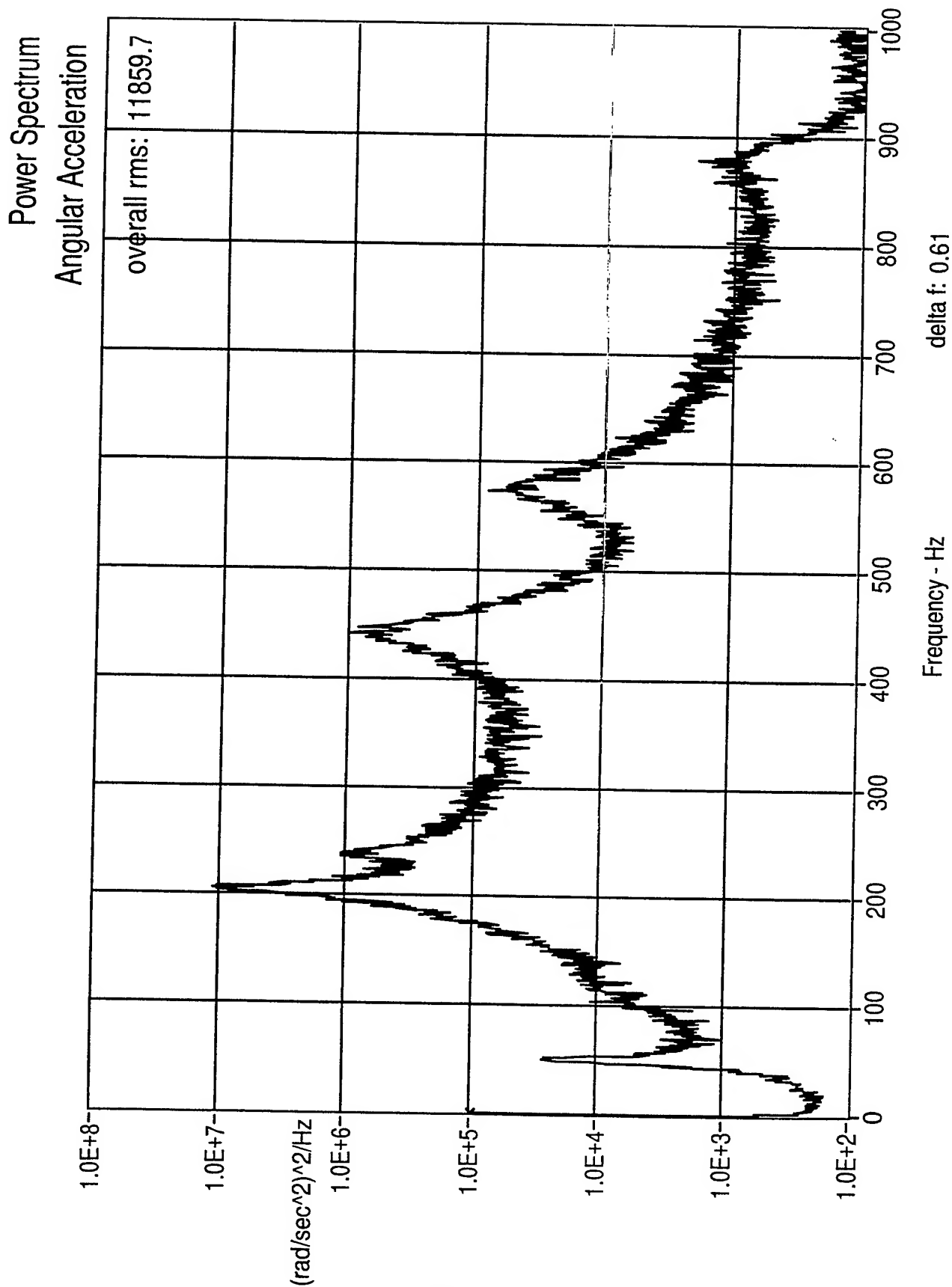




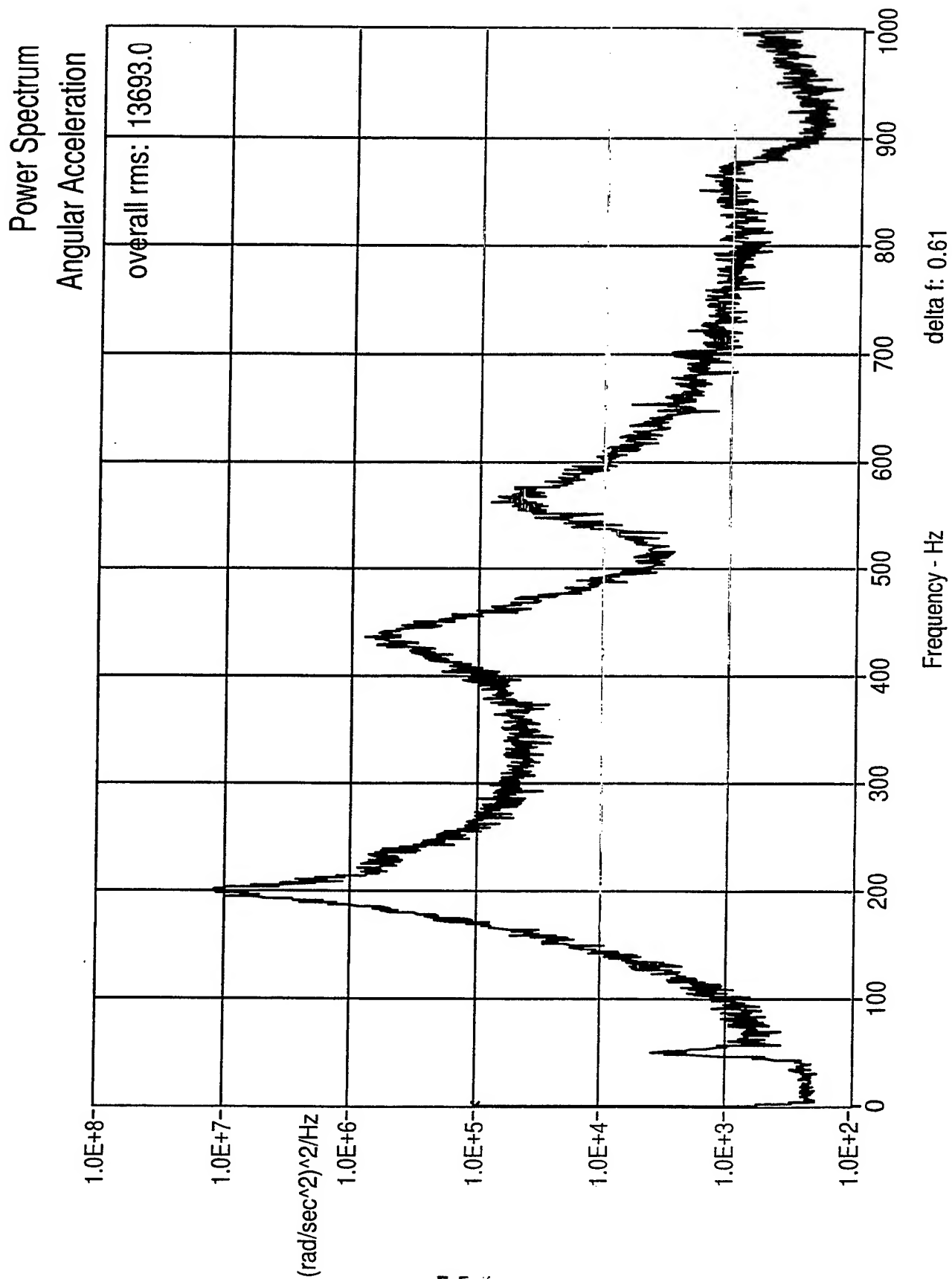
F-15 TPN\_3359: alpha=24 beta=4 bp=45



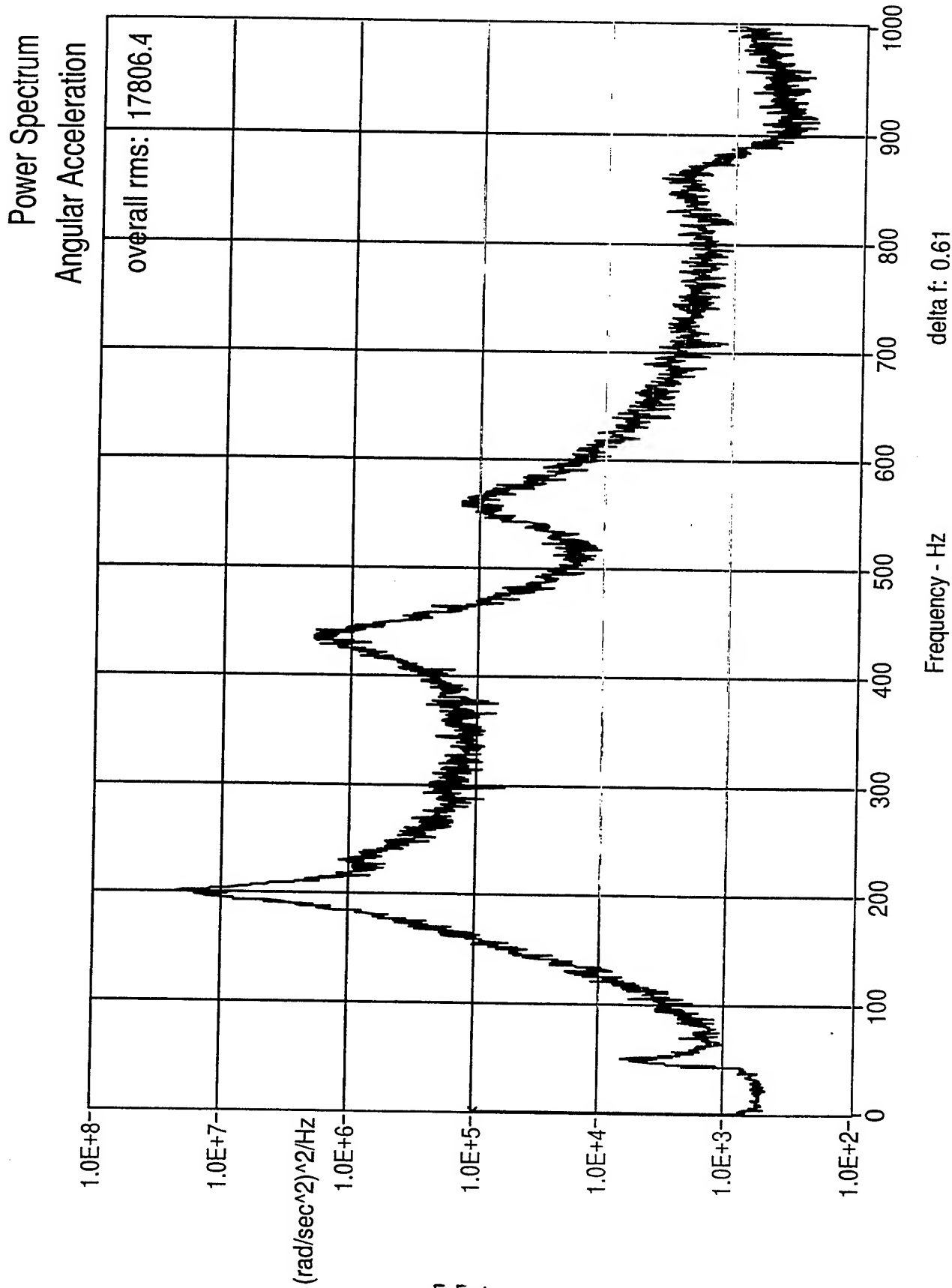
F-15 TPN\_3361: alpha=32 beta=4 bp=45



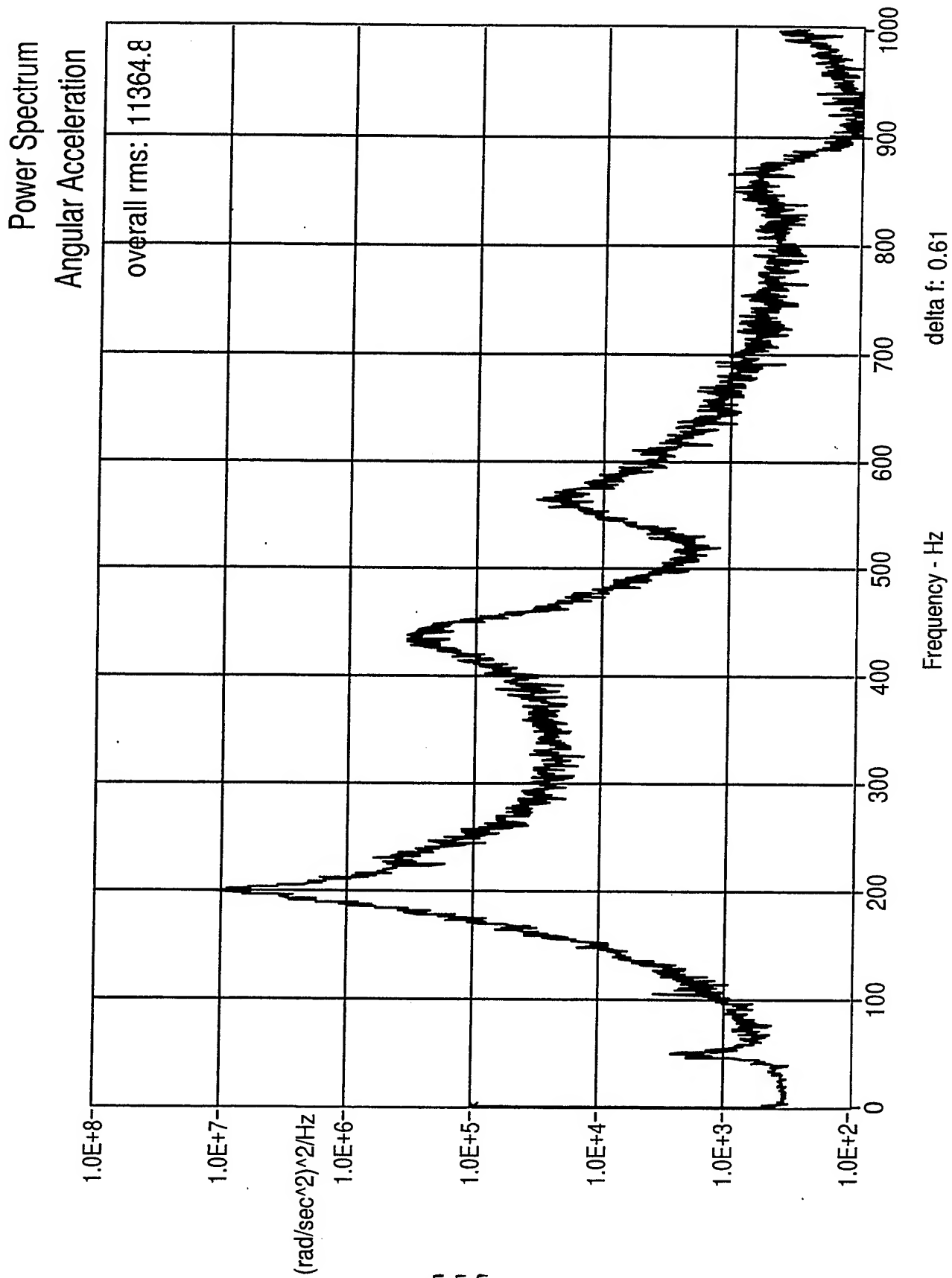
F-15 TPN\_3034: alpha=20 beta=-4 bp=65



F-15 TPN\_3036: alpha=24 beta=-4 bp=65

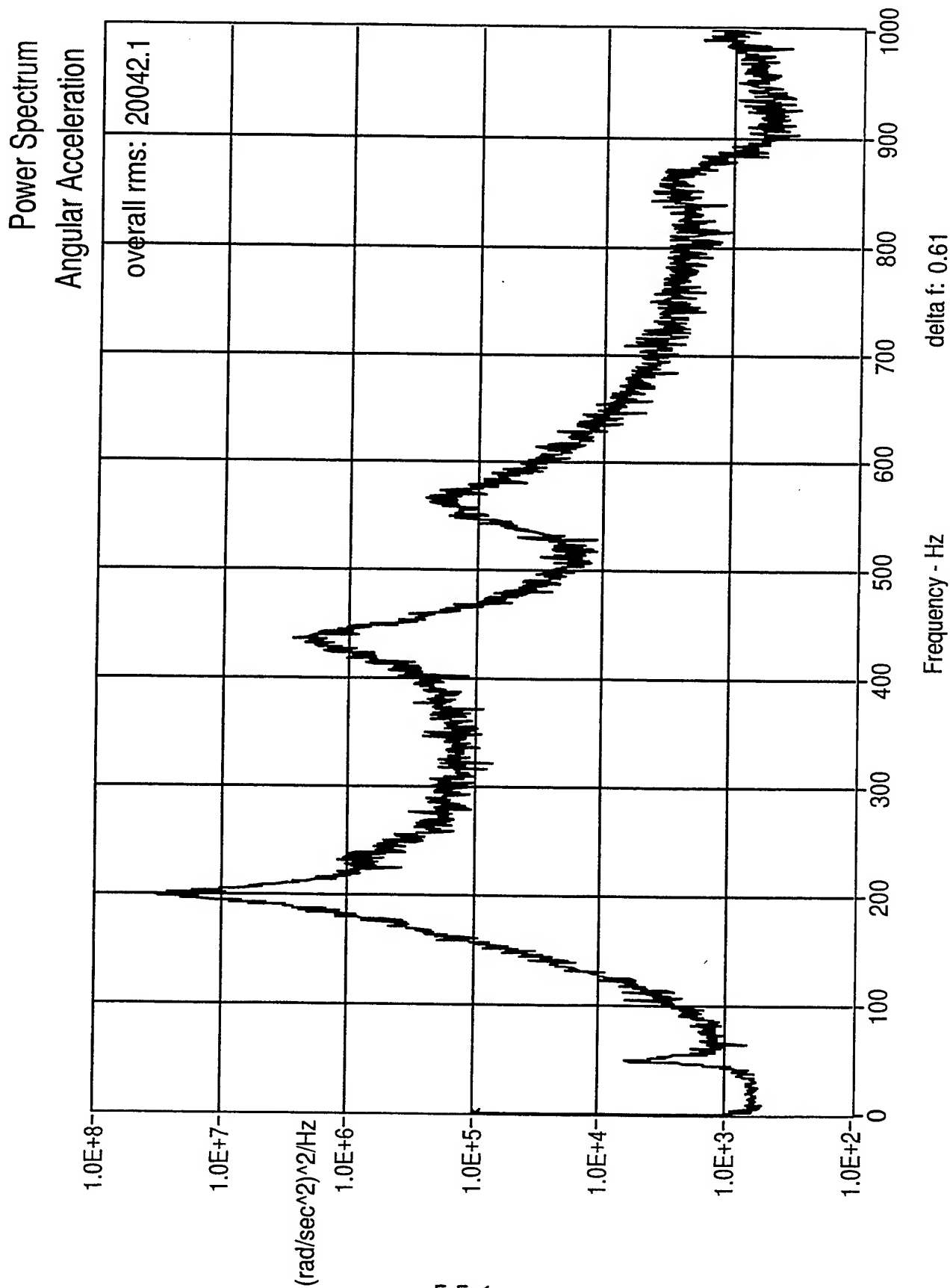


F-15 TPN\_3040: alpha=20 beta=0 bp=65

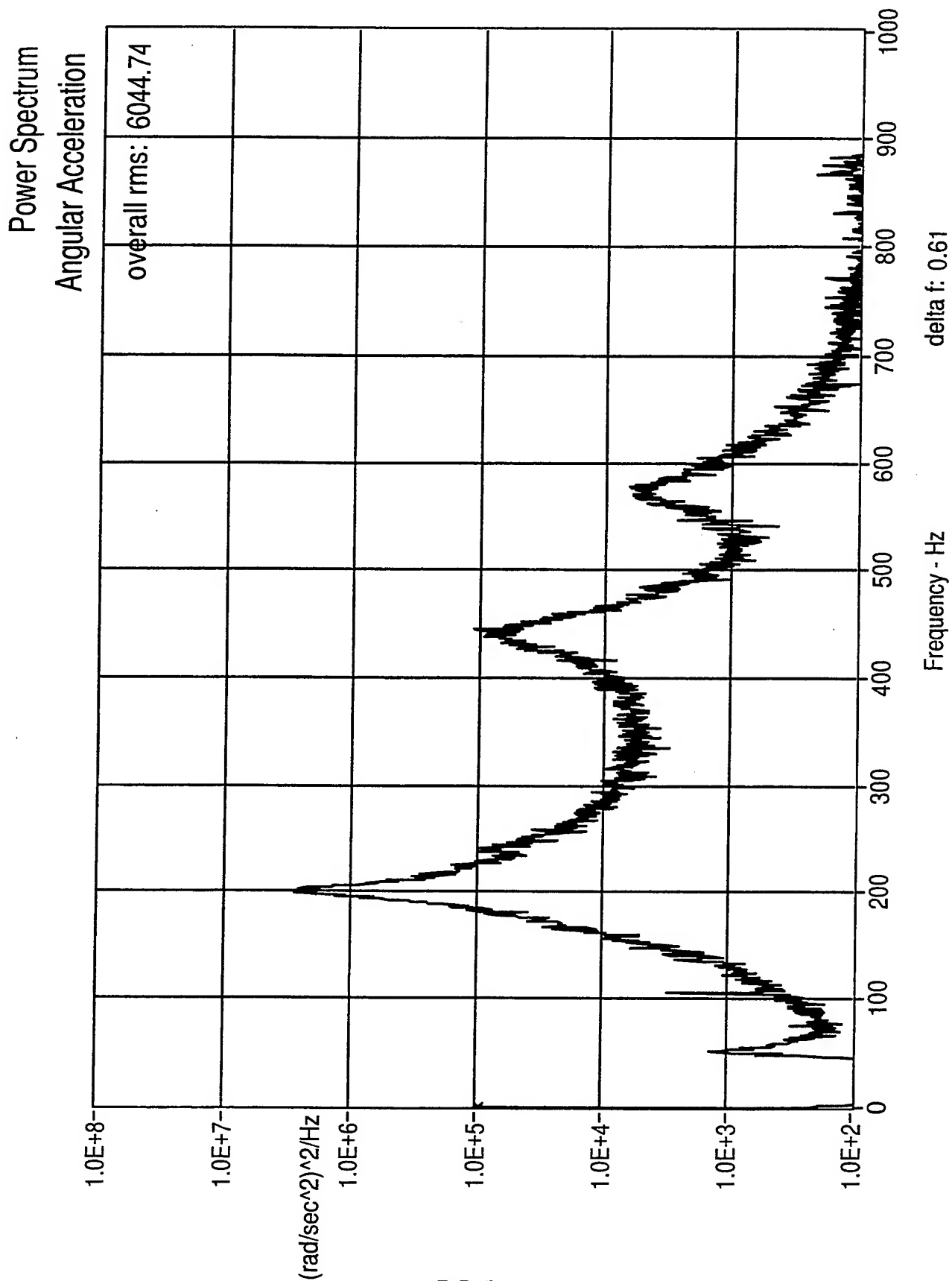




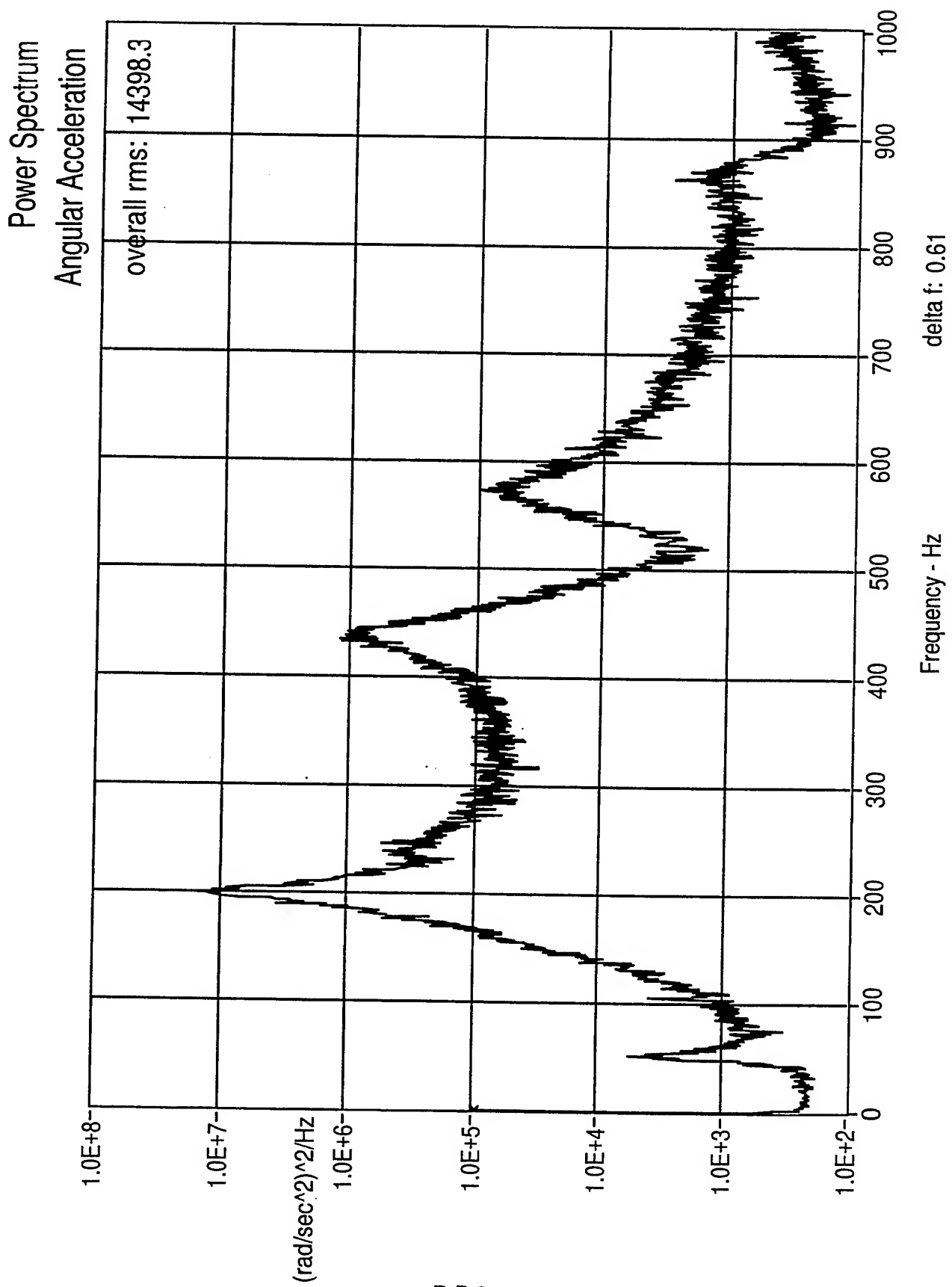
F-15 TPN\_3042: alpha=24 beta=0 bp=65



F-15 TPN\_3046: alpha=20 beta=4 bp=65



F-15 TPN\_3048: alpha=24 beta=4 bp=65



**FLEXIBLE TAIL RESPONSE**

**ACCELERATION DATA**

**Q= 30 PSF**

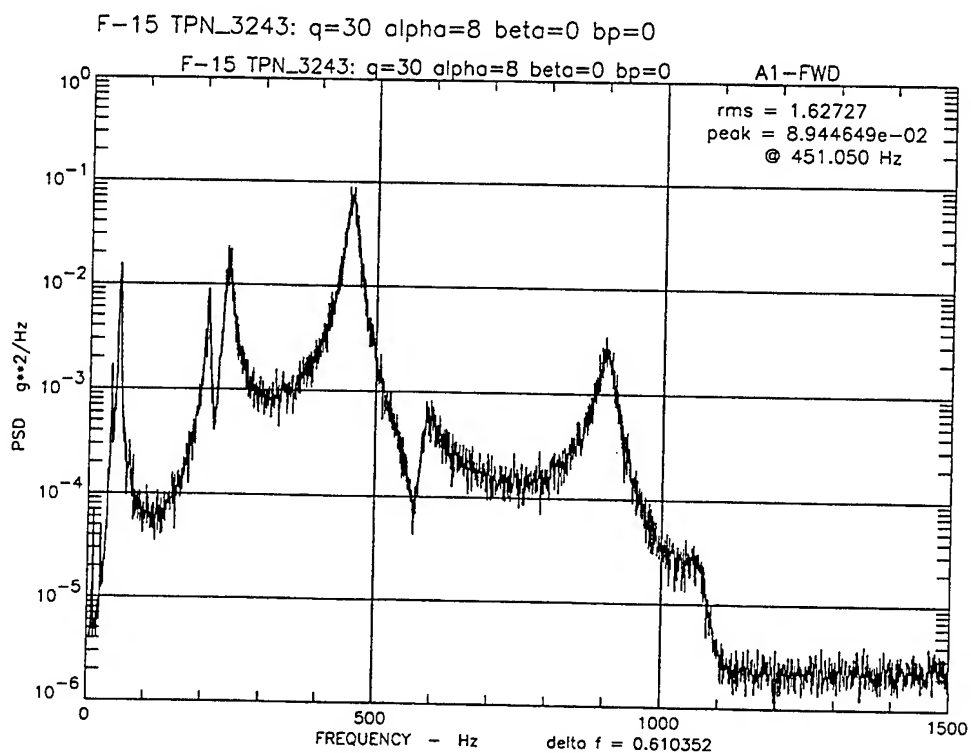
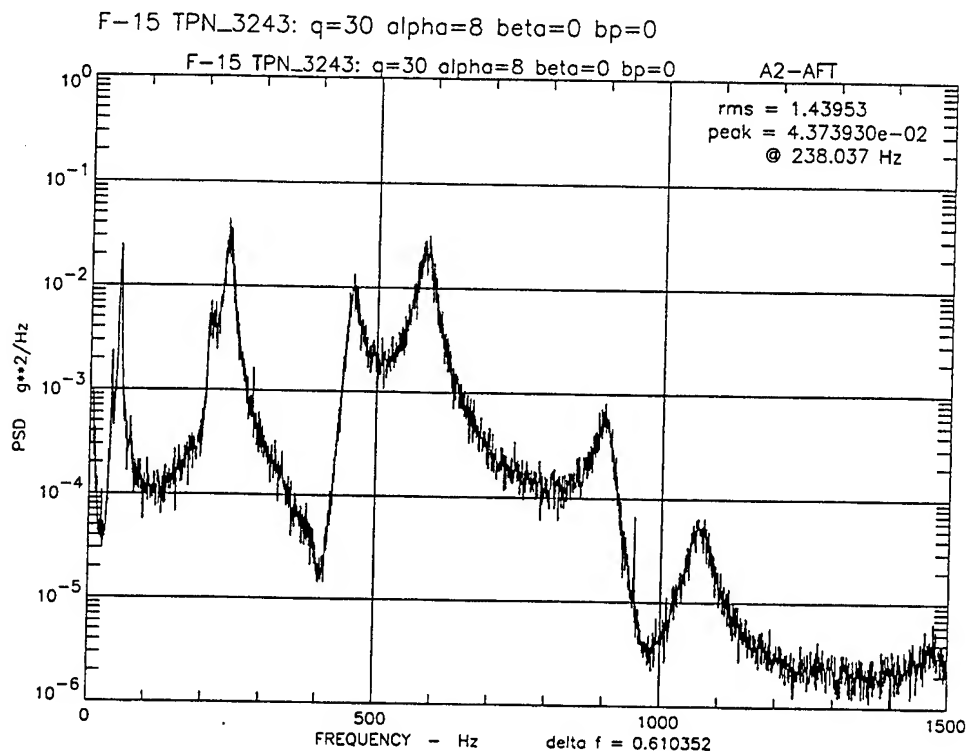
**PSD GRAPHS**

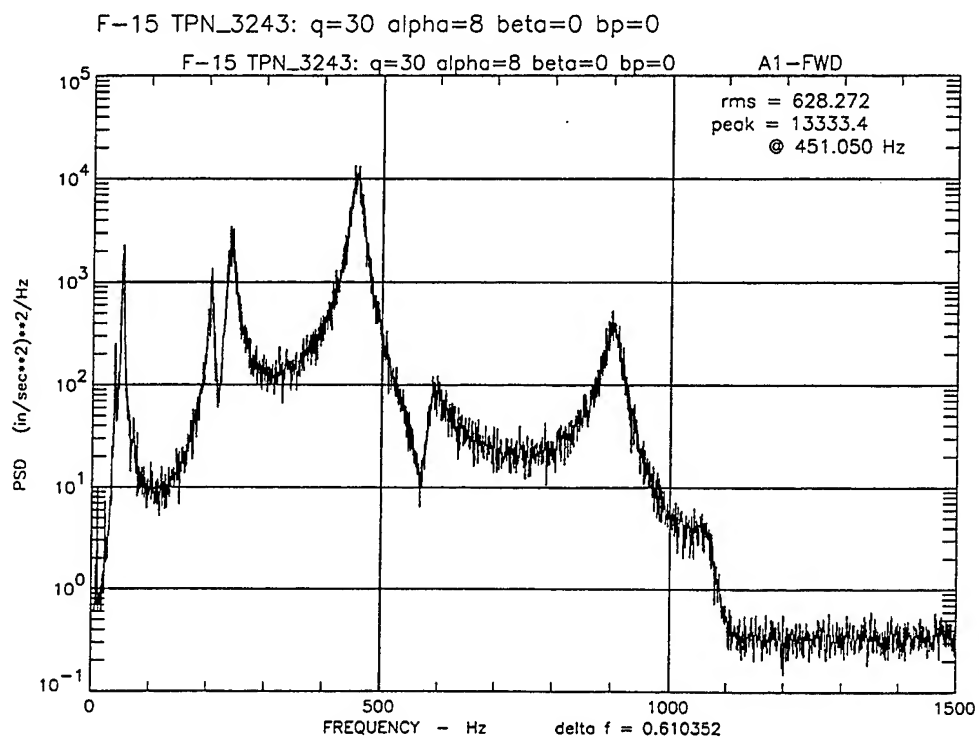
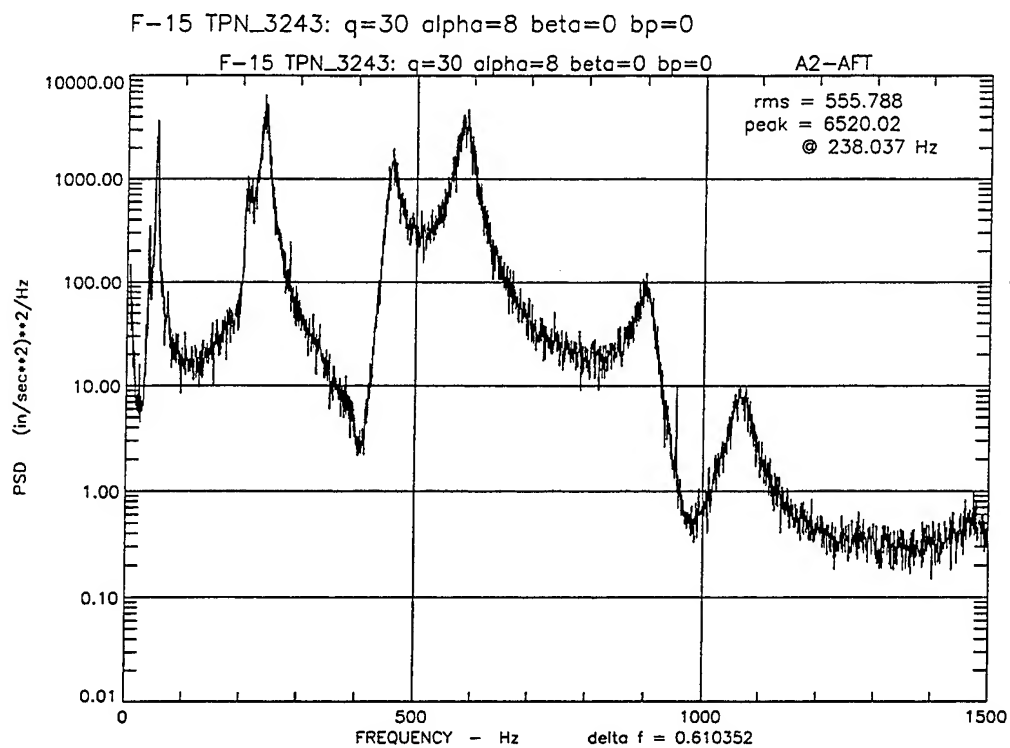
**4.1.2.1 FWD AND AFT ACCELS, beta= 0, +4, -4 Deg, WBP = 0, 45, psi**

**ALPHAS = 8, 20, 24, 32 DEG**

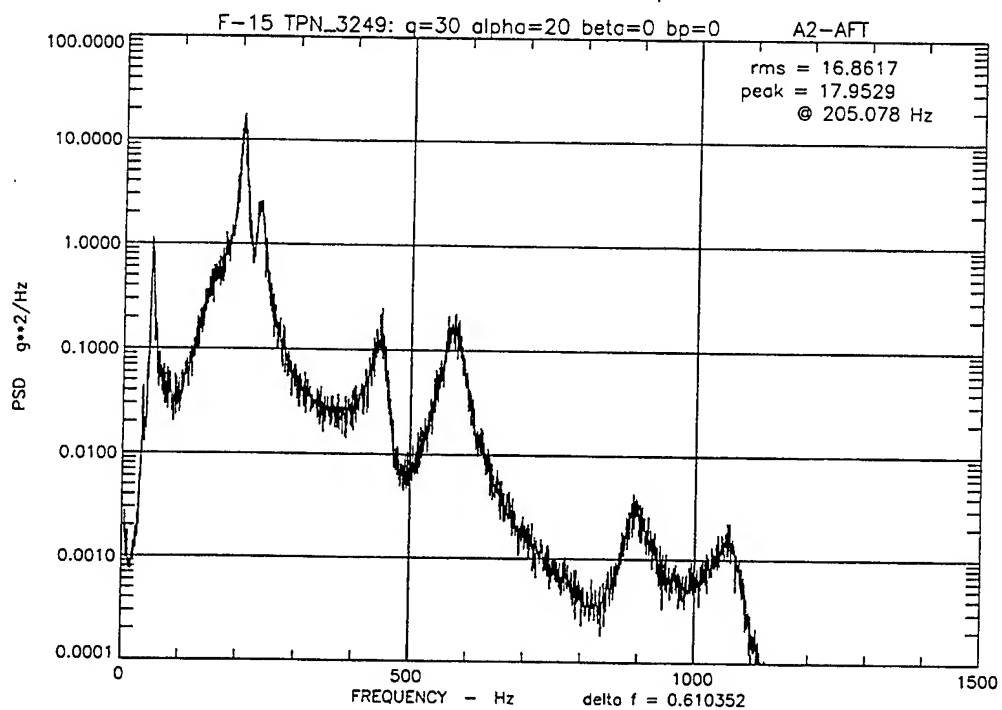
**( note, the dimensional graph , ( in/sec)<sup>2</sup>/hz is followed by a graph ( g's)<sup>2</sup>/hz**

**data is blocked off by blowing pressures, with beta variation within**

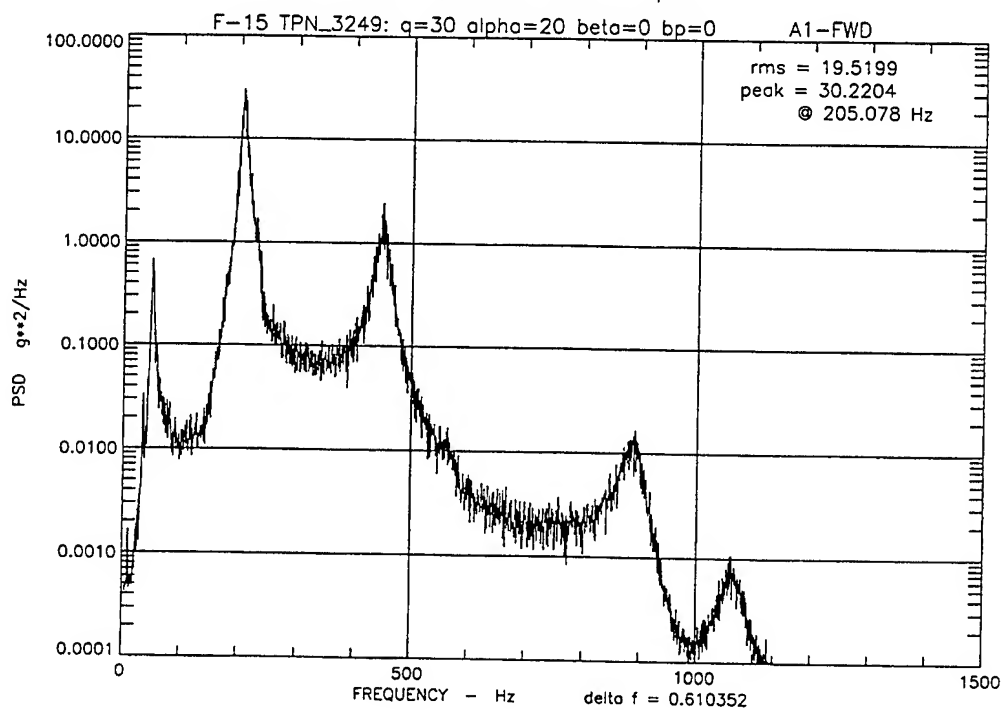


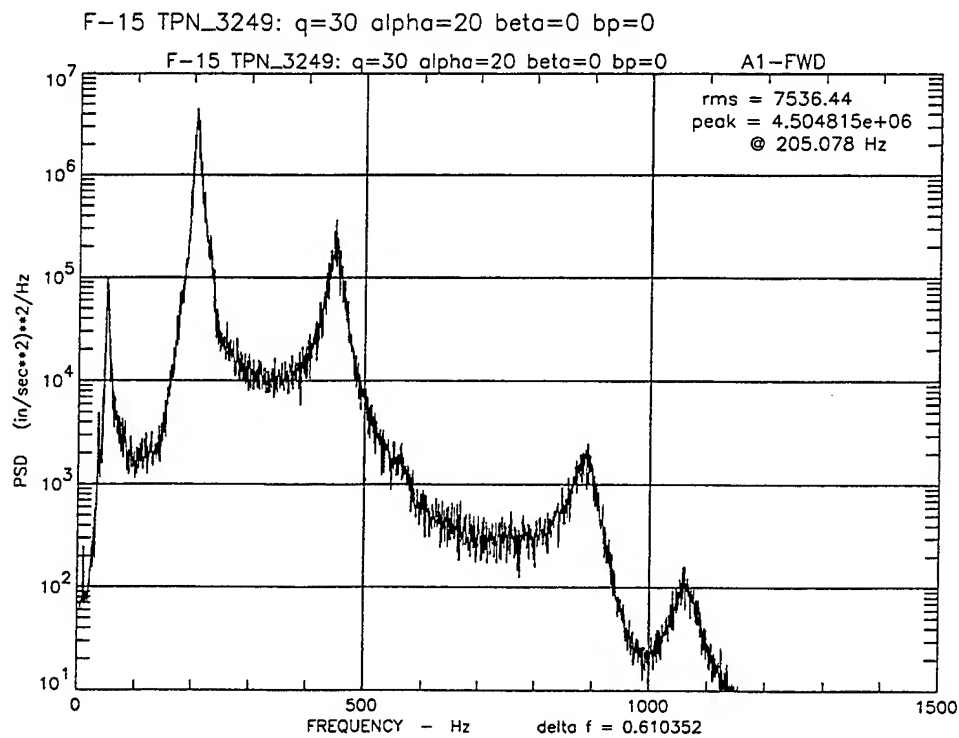
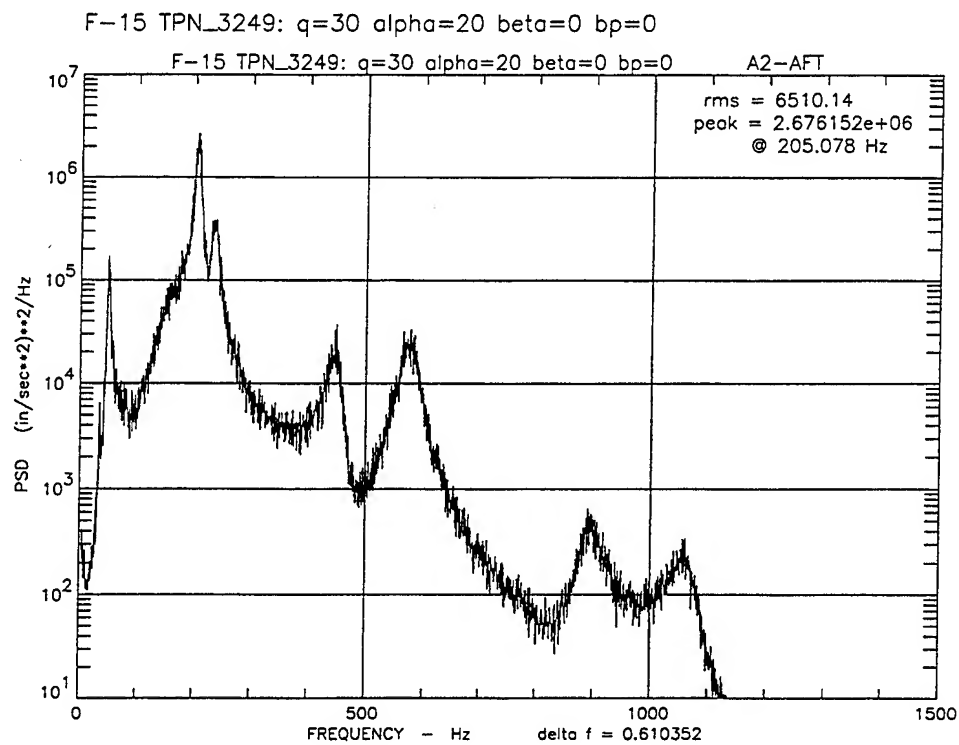


F-15 TPN\_3249: q=30 alpha=20 beta=0 bp=0



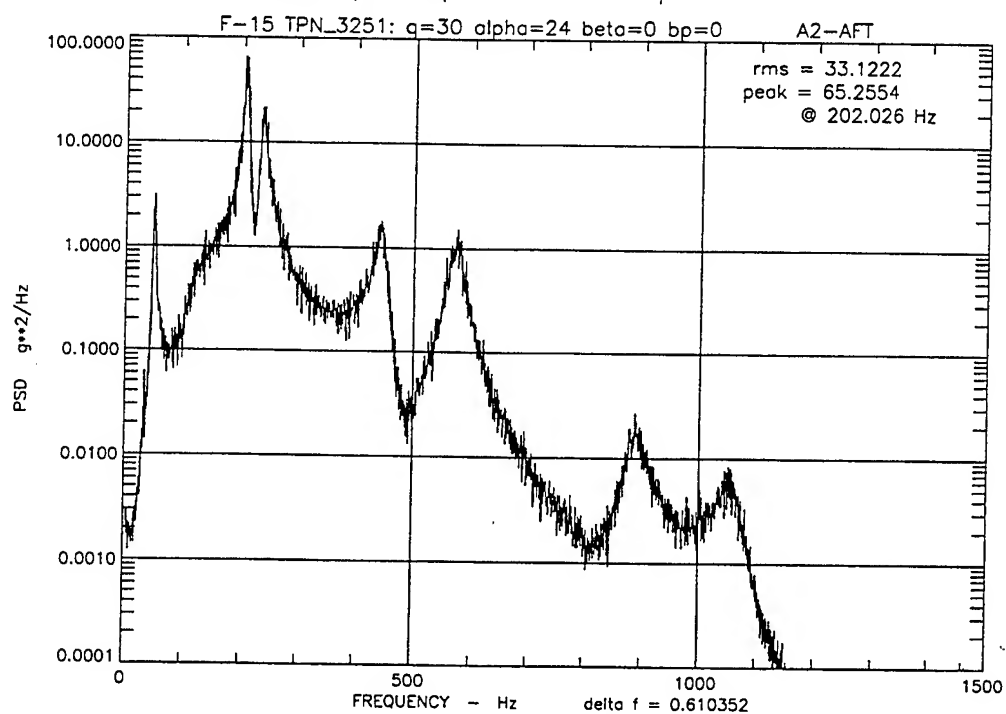
F-15 TPN\_3249: q=30 alpha=20 beta=0 bp=0



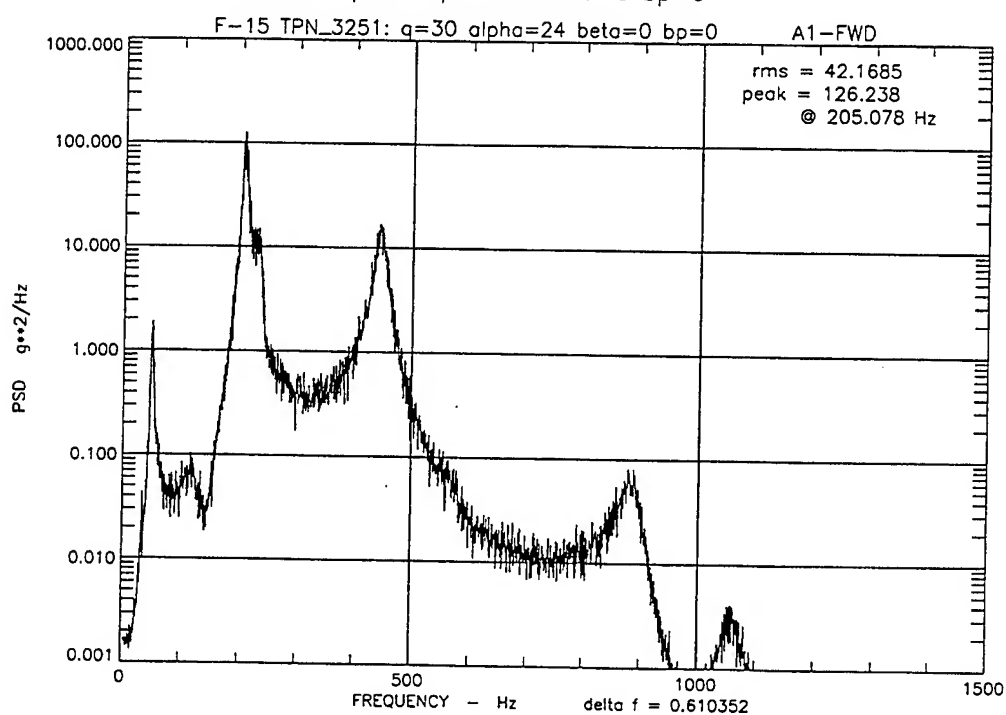




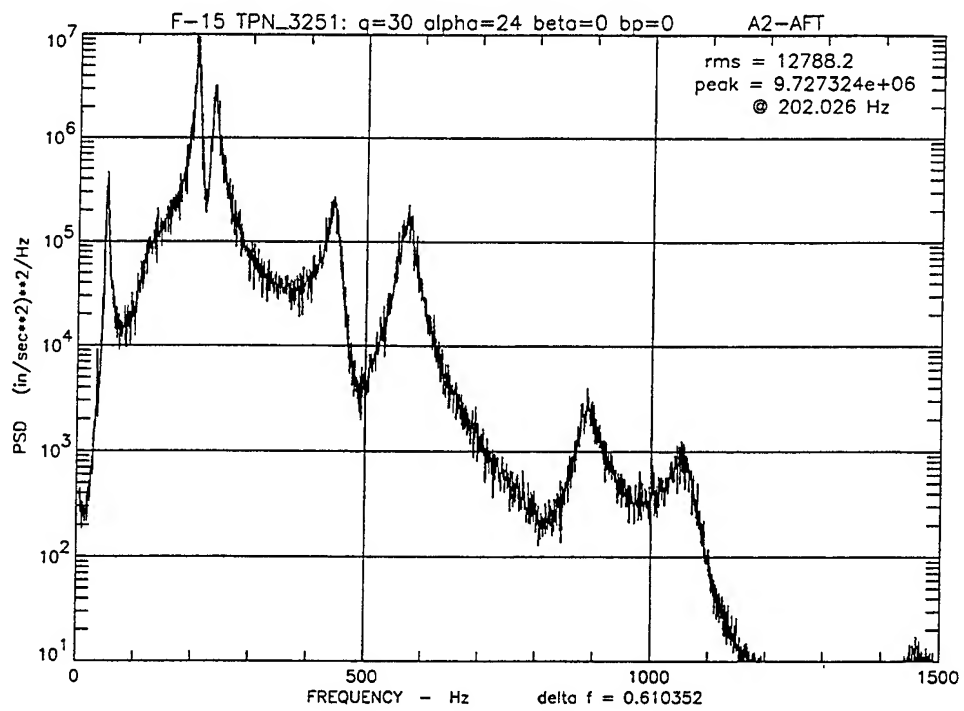
F-15 TPN\_3251: q=30 alpha=24 beta=0 bp=0



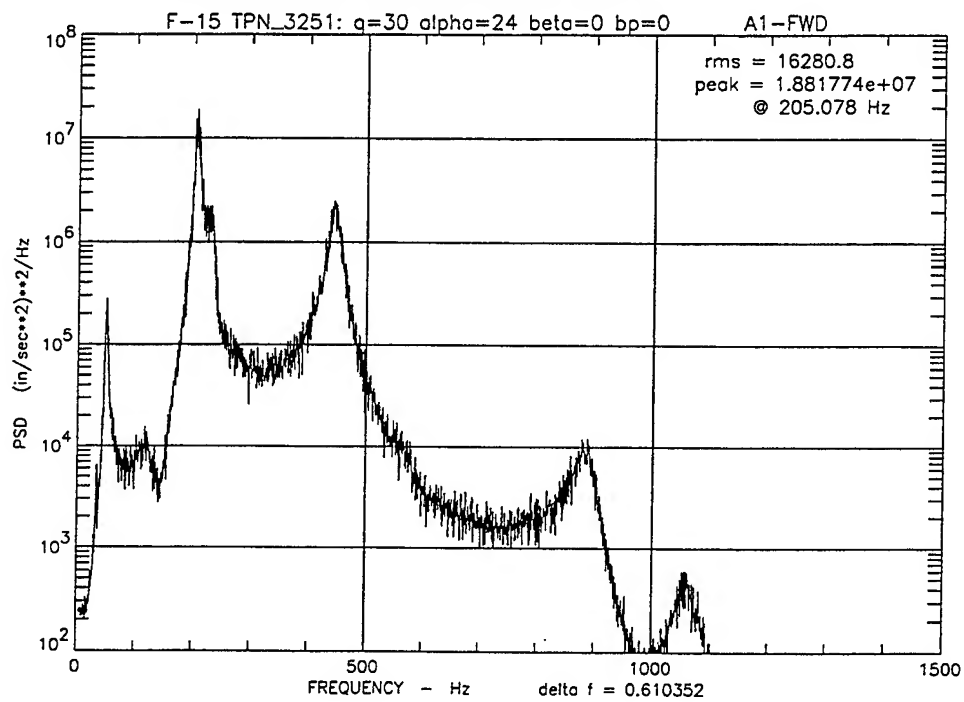
F-15 TPN\_3251: q=30 alpha=24 beta=0 bp=0

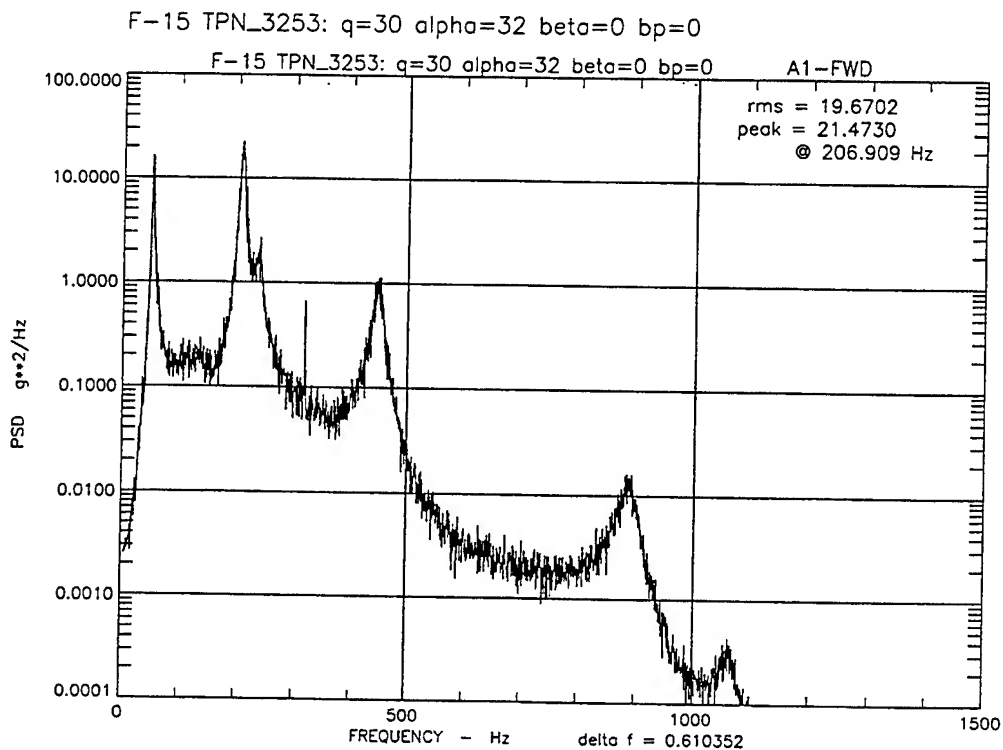
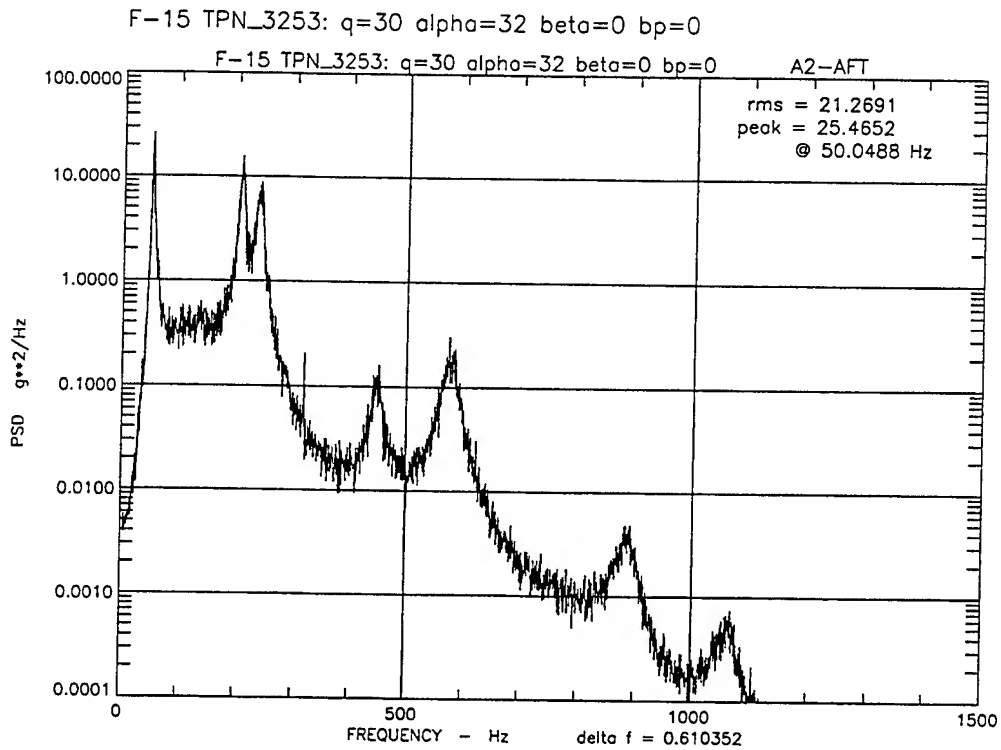


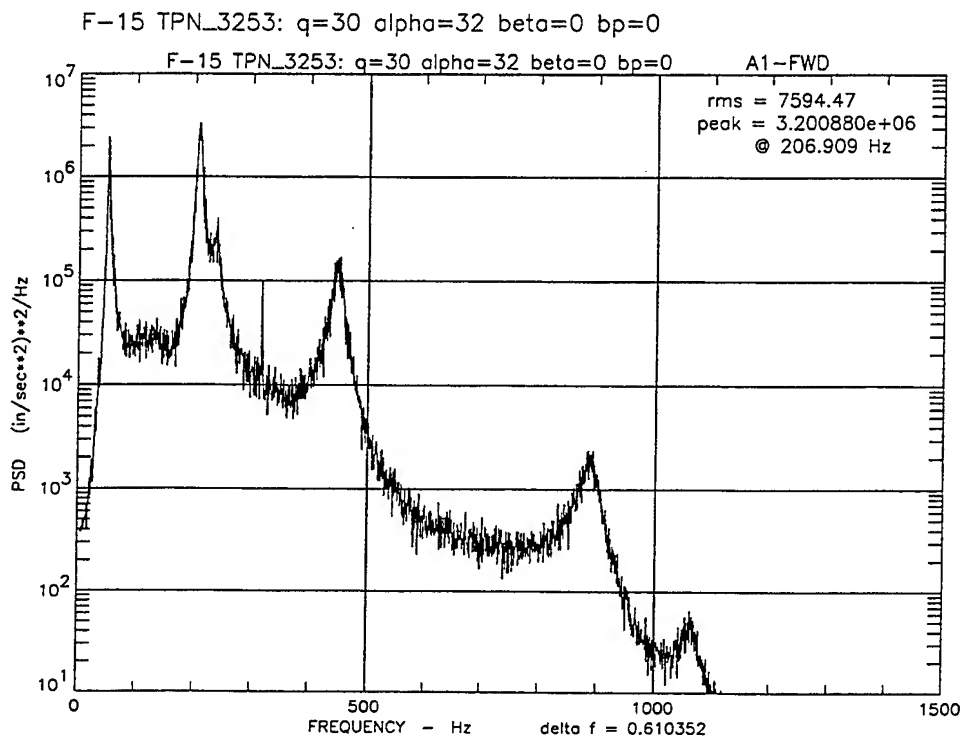
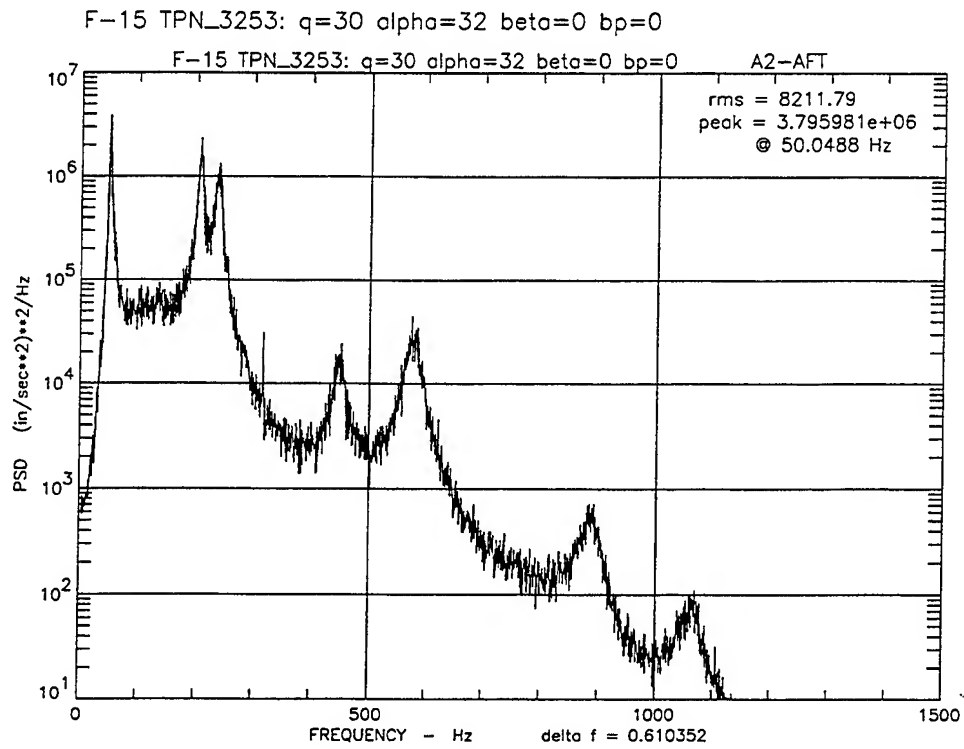
F-15 TPN\_3251: q=30 alpha=24 beta=0 bp=0

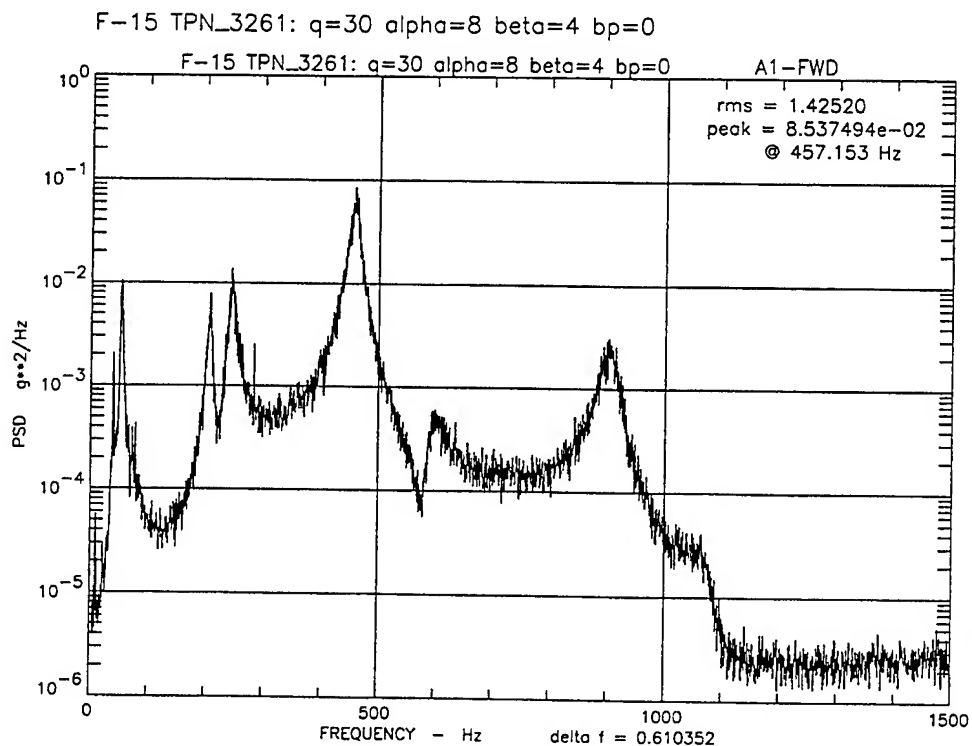
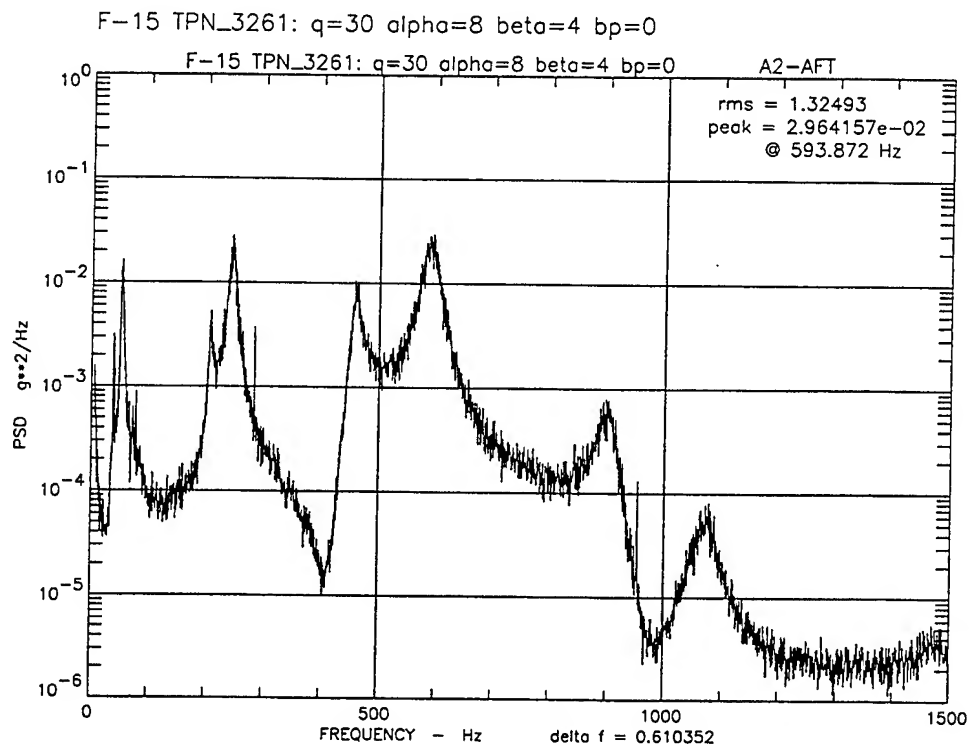


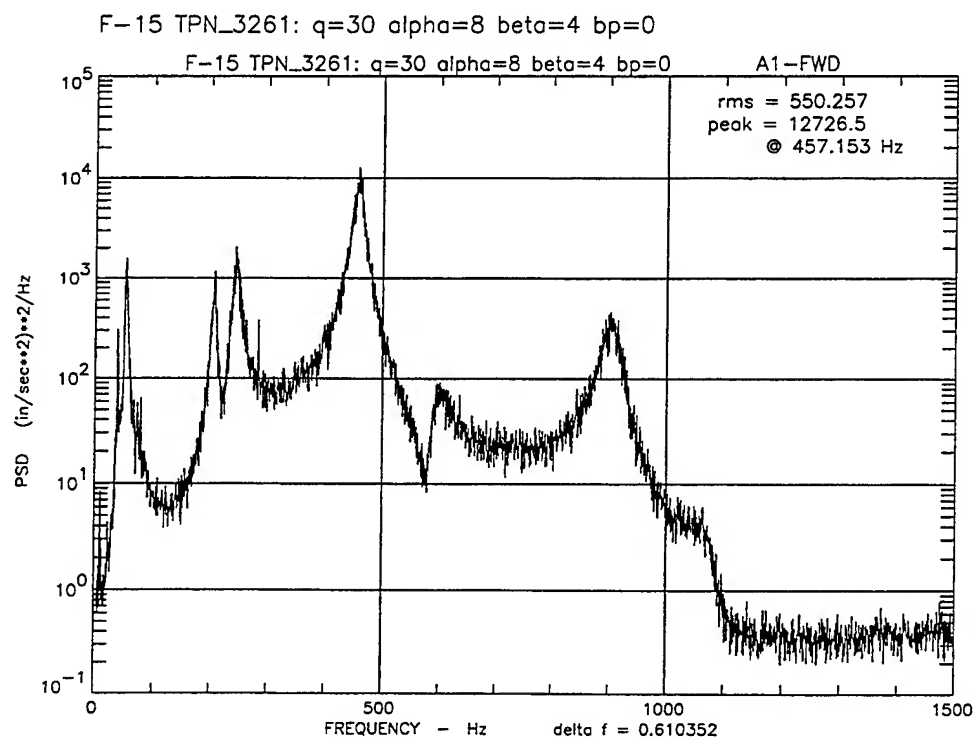
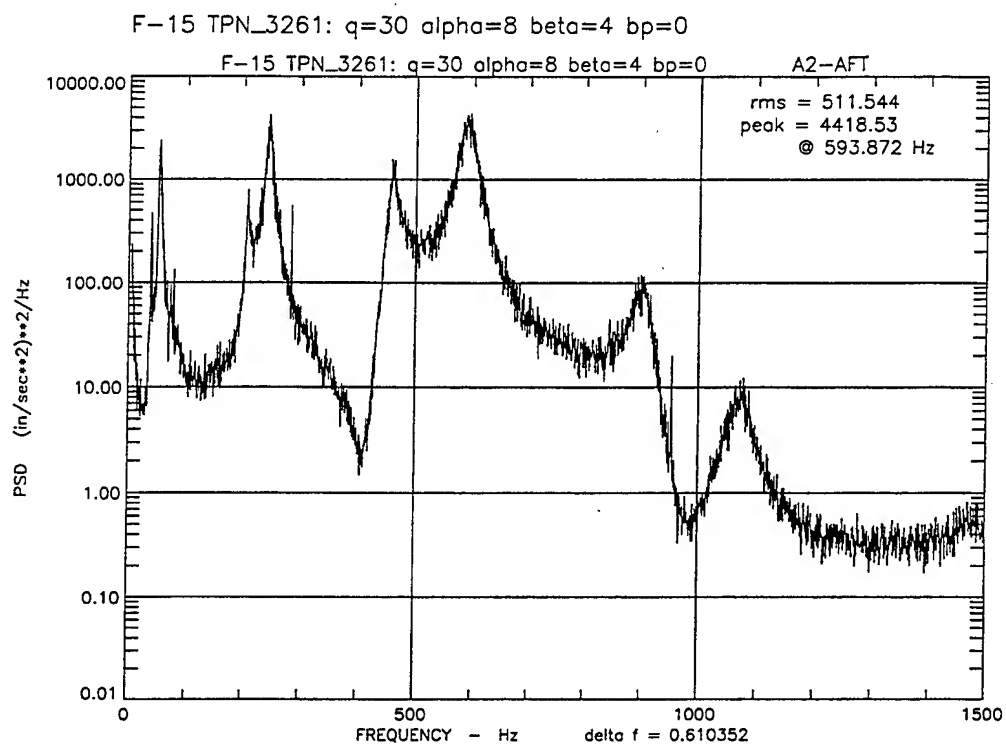
F-15 TPN\_3251: q=30 alpha=24 beta=0 bp=0



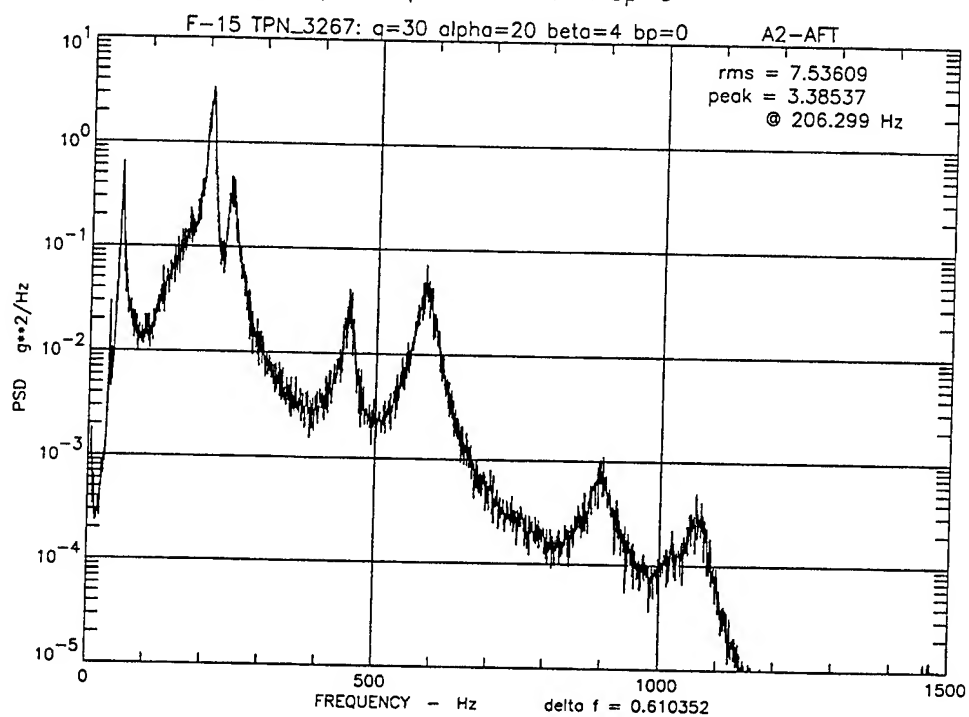




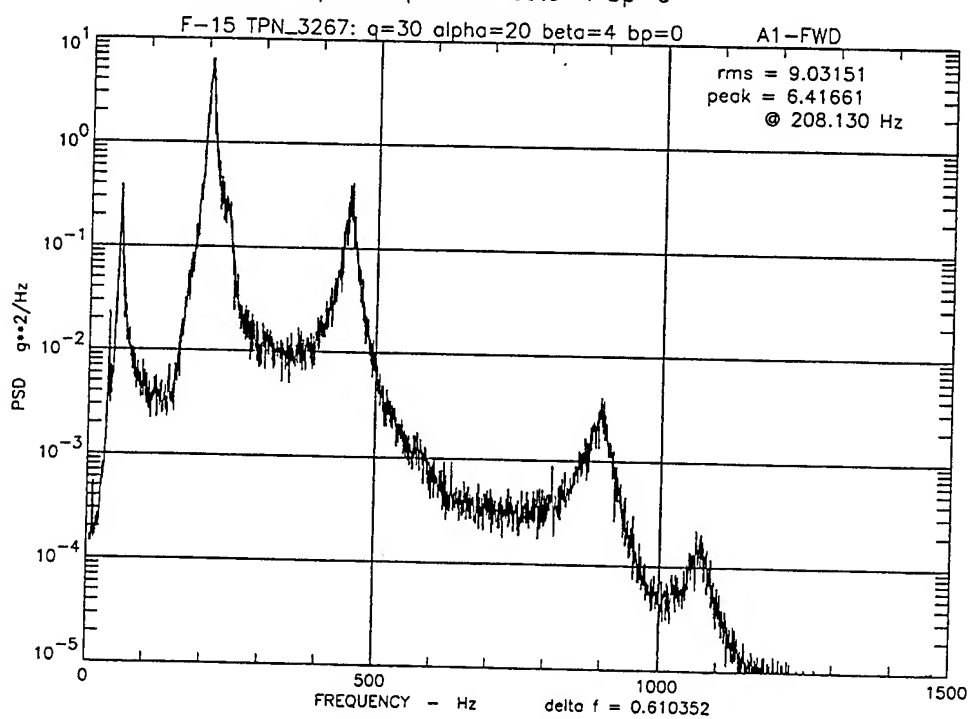


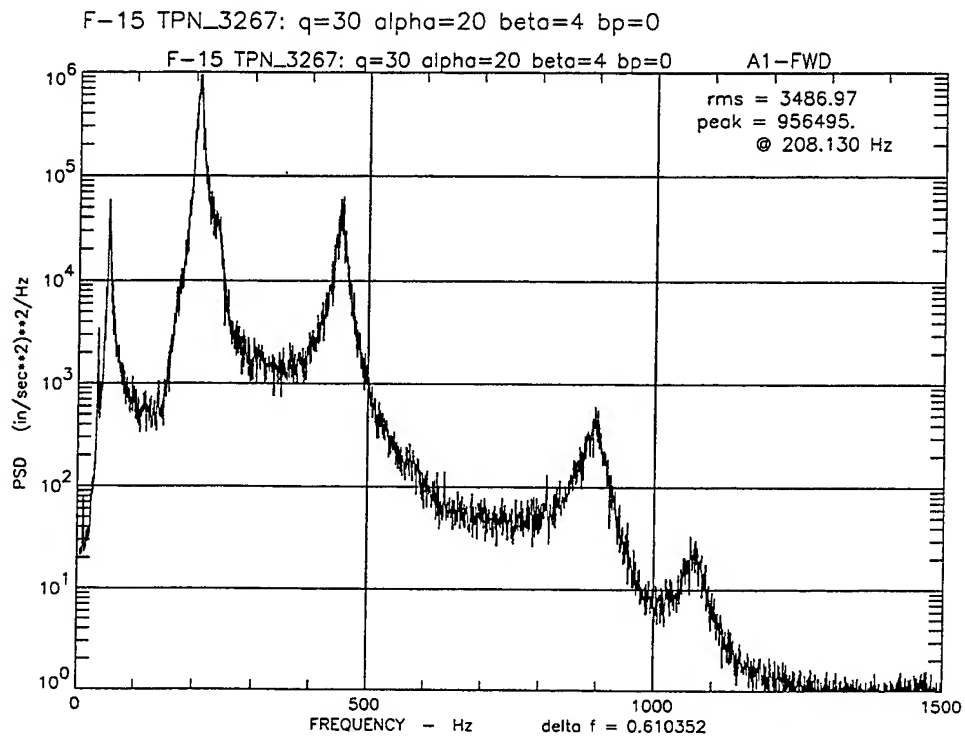
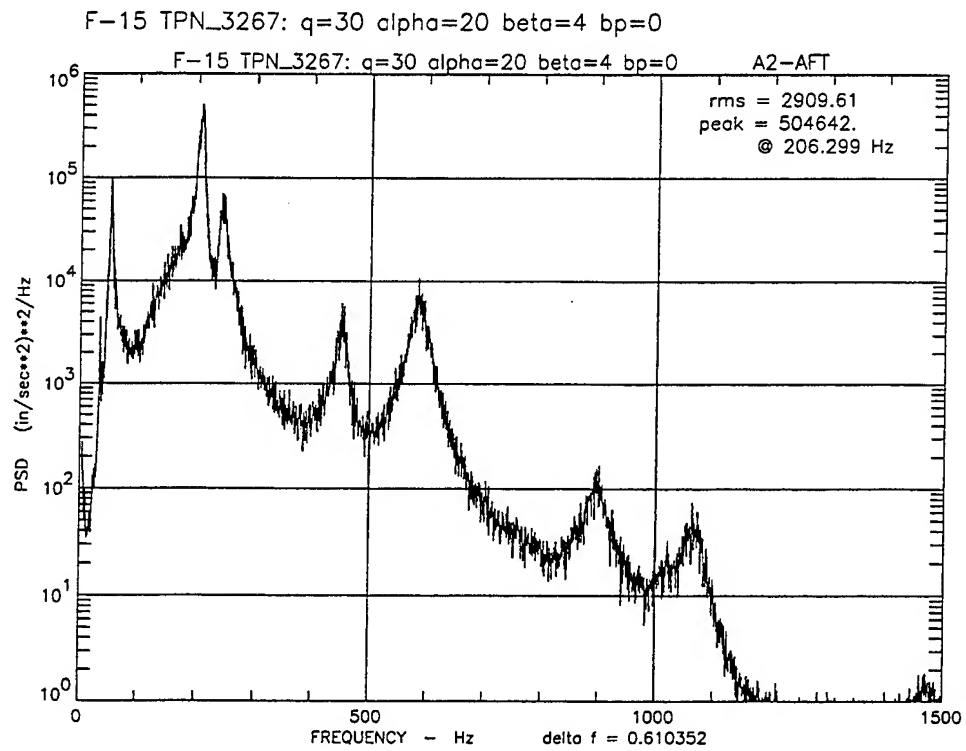


F-15 TPN\_3267: q=30 alpha=20 beta=4 bp=0



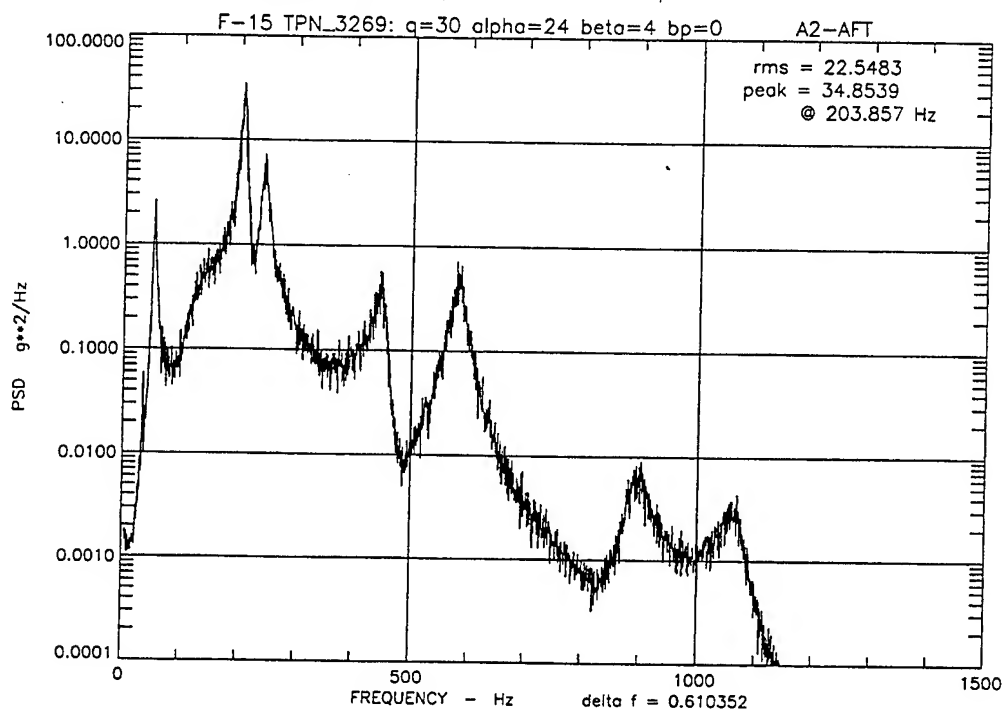
F-15 TPN\_3267: q=30 alpha=20 beta=4 bp=0



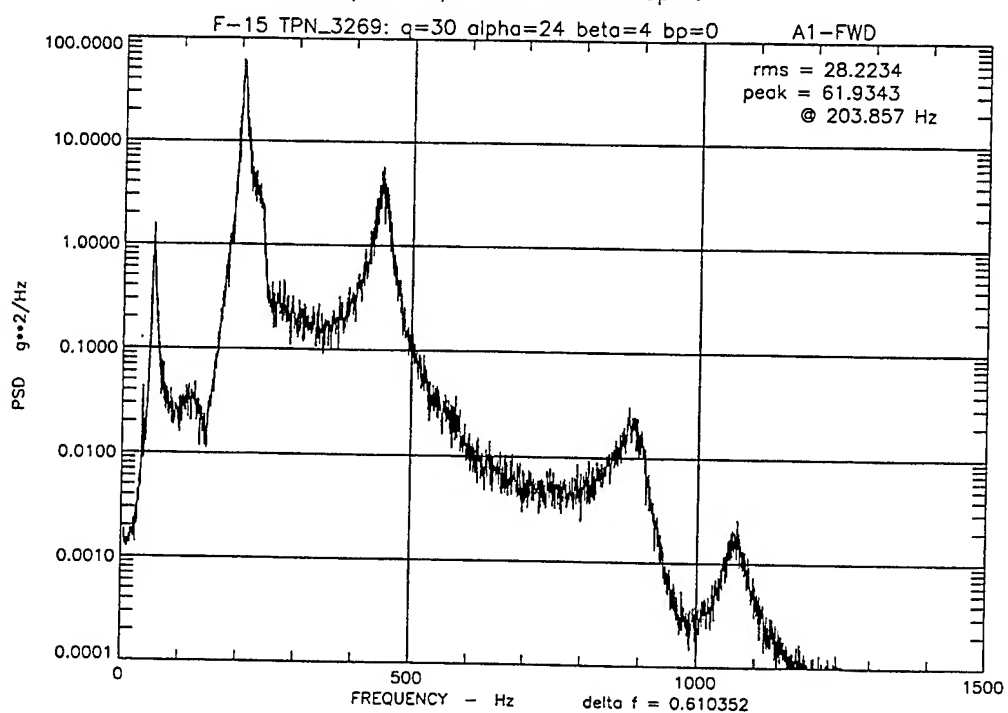




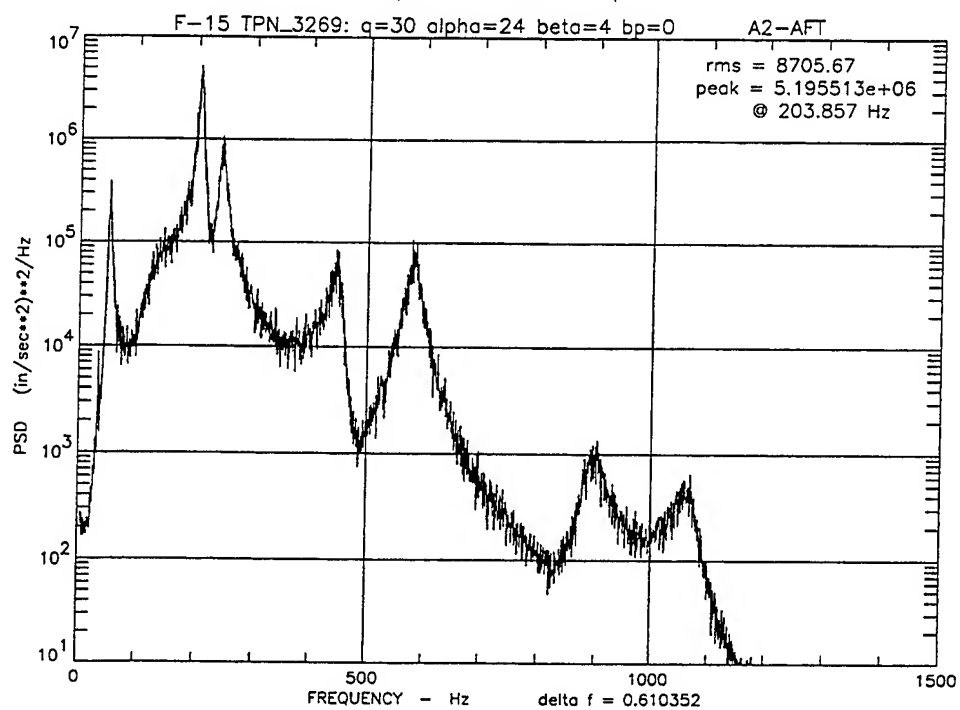
F-15 TPN\_3269: q=30 alpha=24 beta=4 bp=0



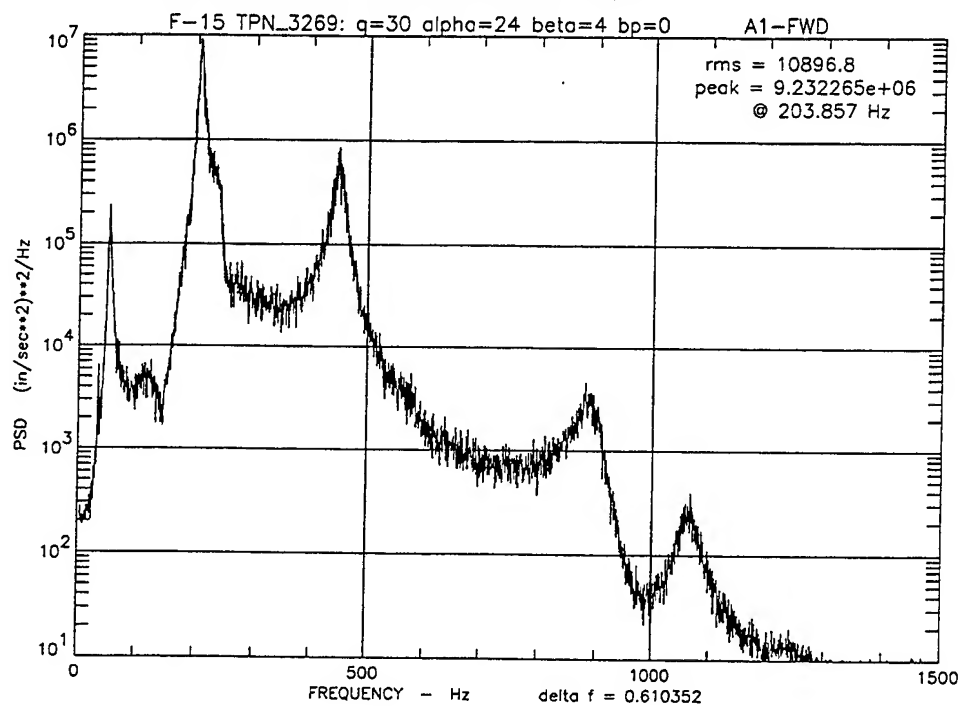
F-15 TPN\_3269: q=30 alpha=24 beta=4 bp=0

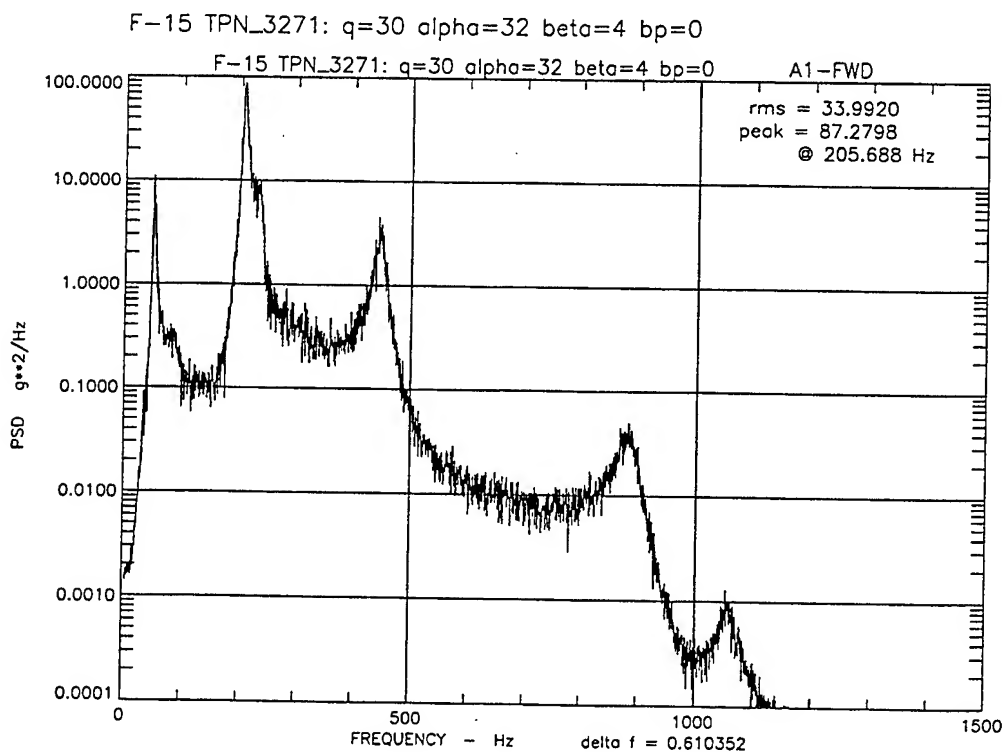
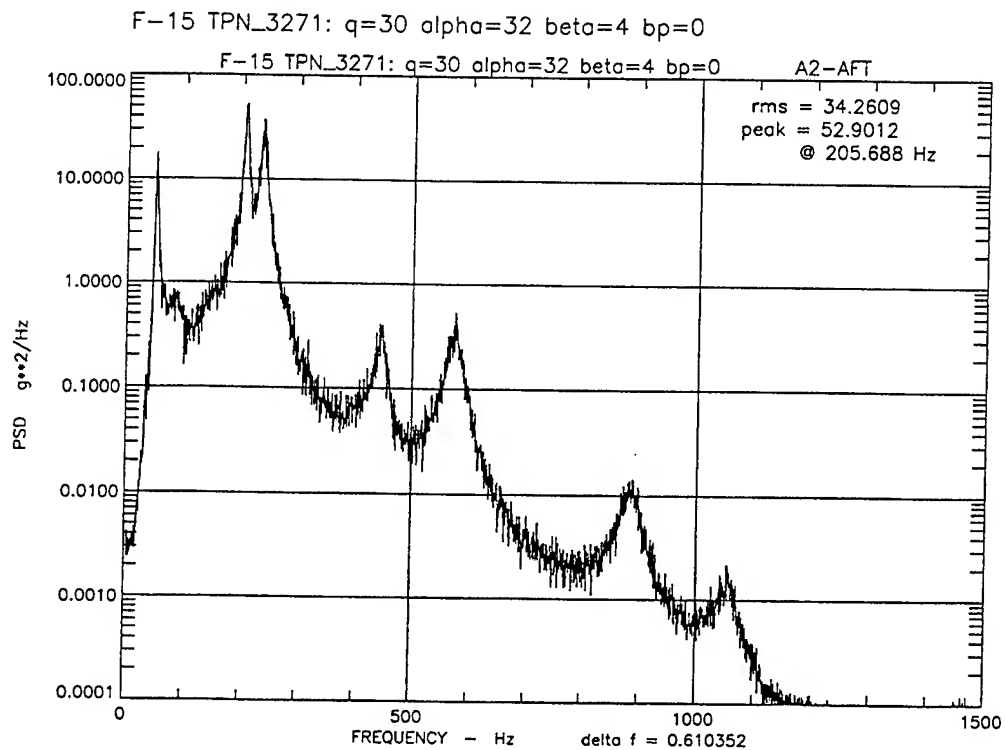


F-15 TPN\_3269: q=30 alpha=24 beta=4 bp=0

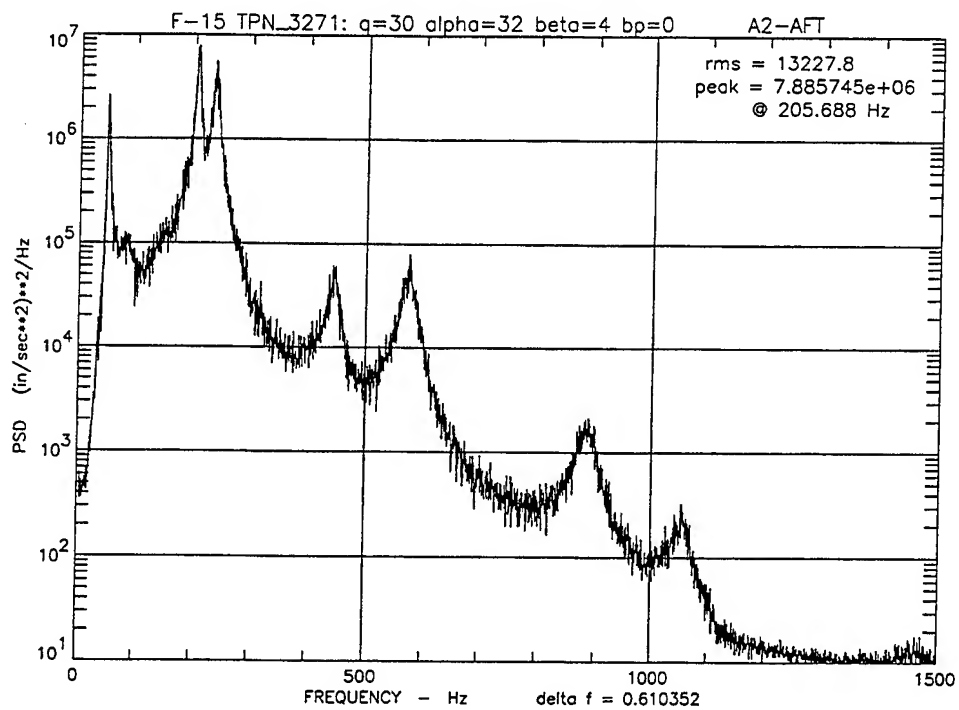


F-15 TPN\_3269: q=30 alpha=24 beta=4 bp=0

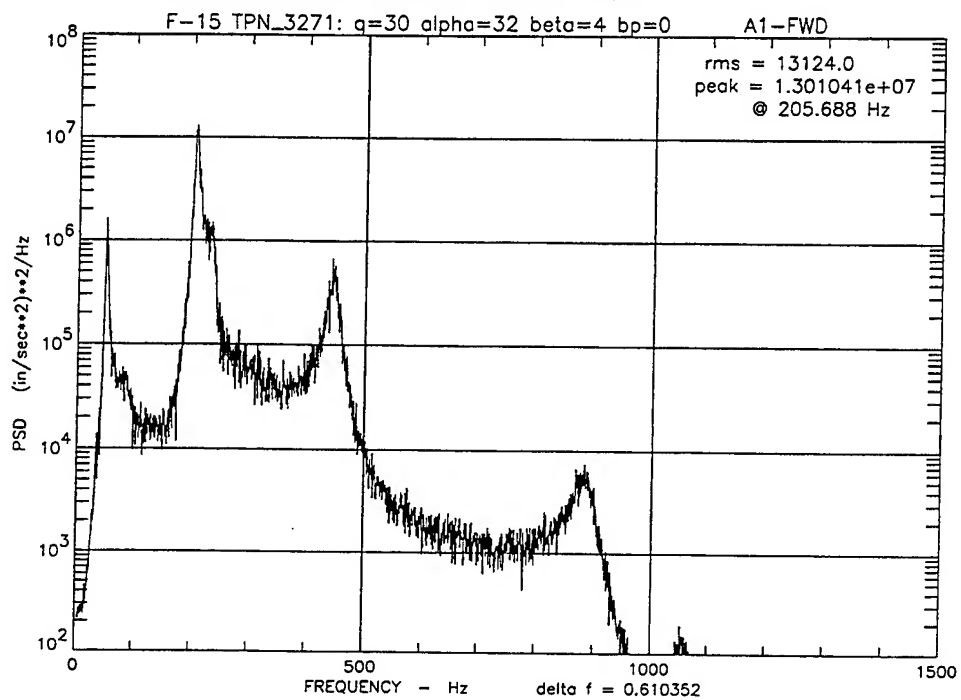


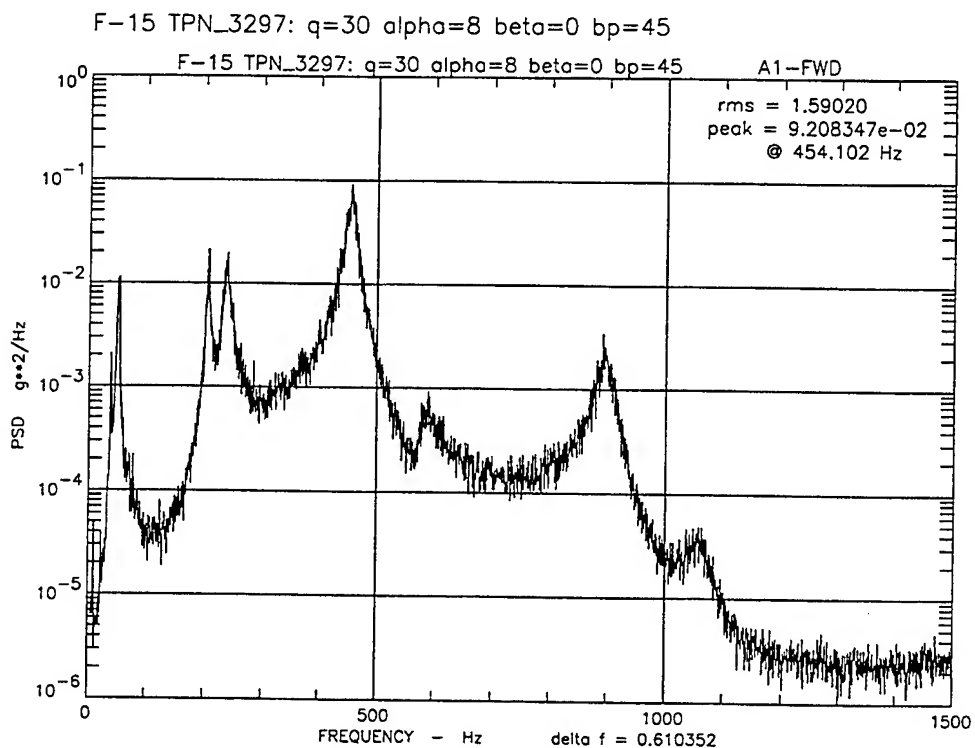
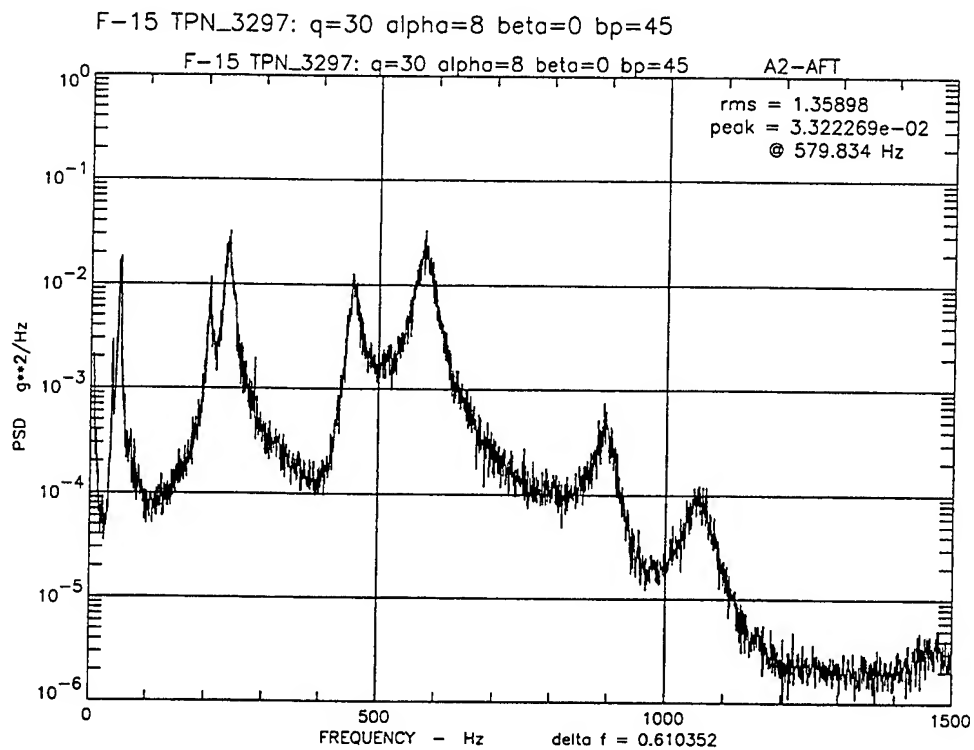


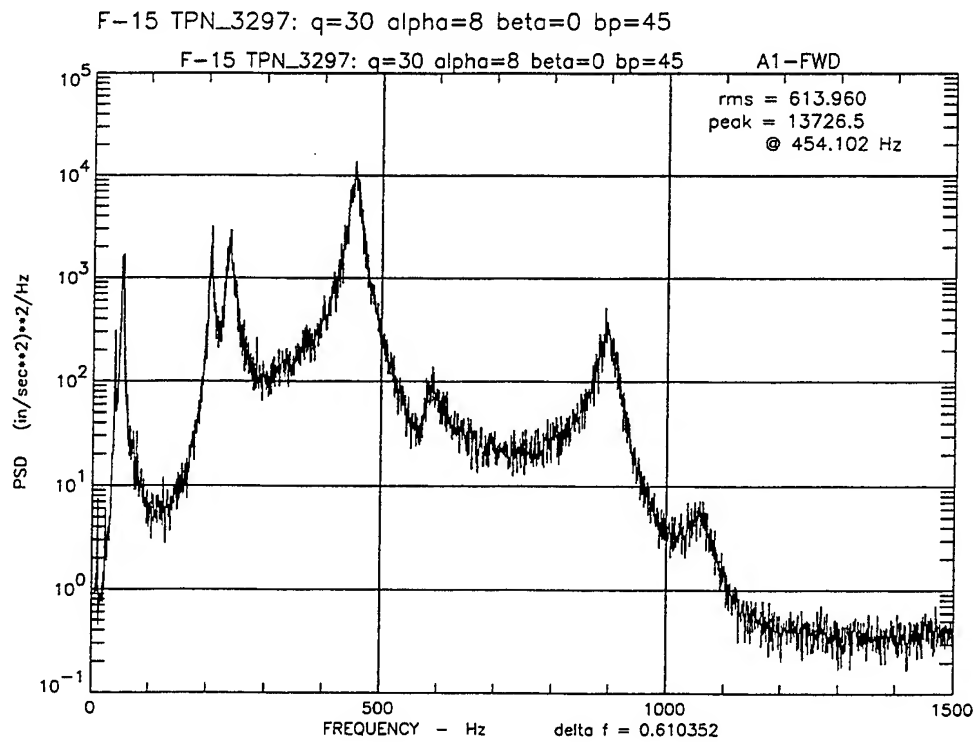
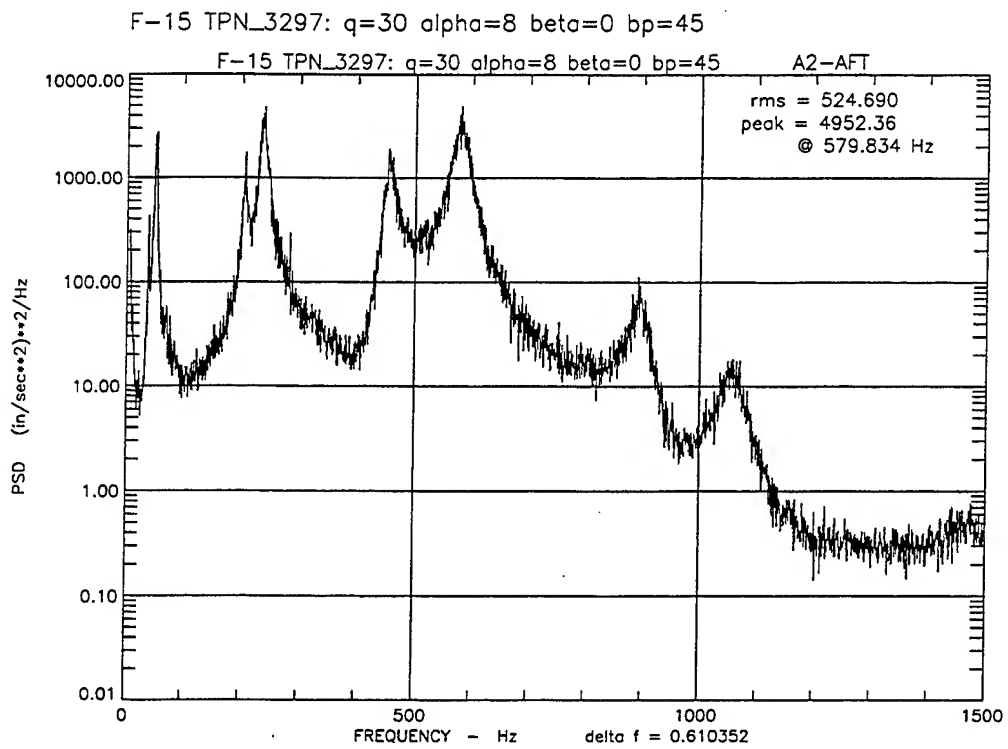
F-15 TPN\_3271: q=30 alpha=32 beta=4 bp=0



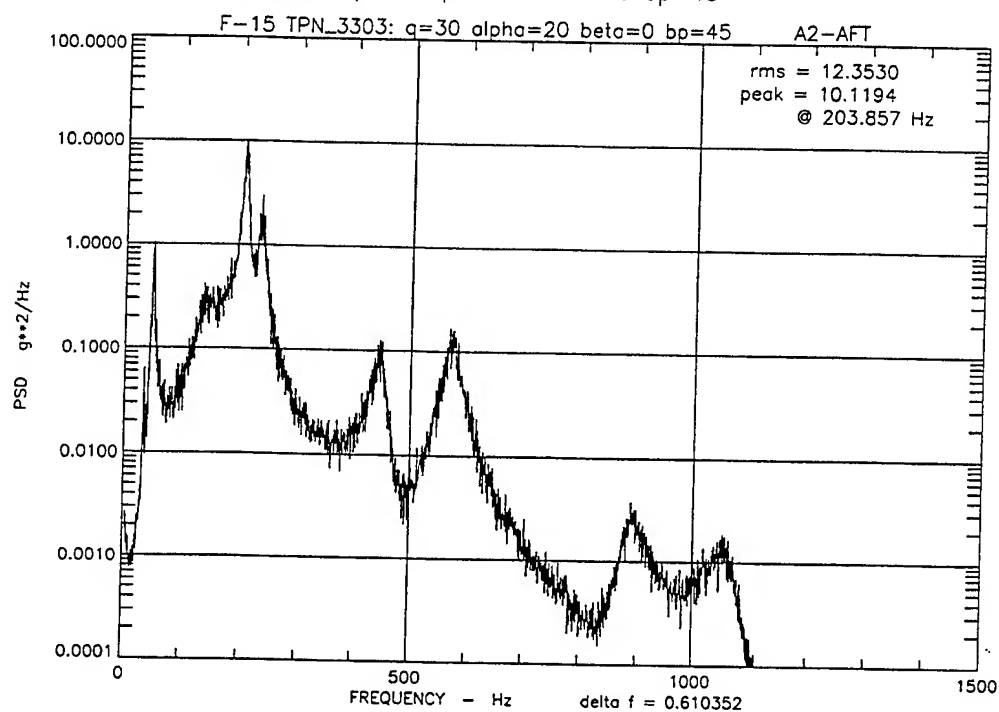
F-15 TPN\_3271: q=30 alpha=32 beta=4 bp=0



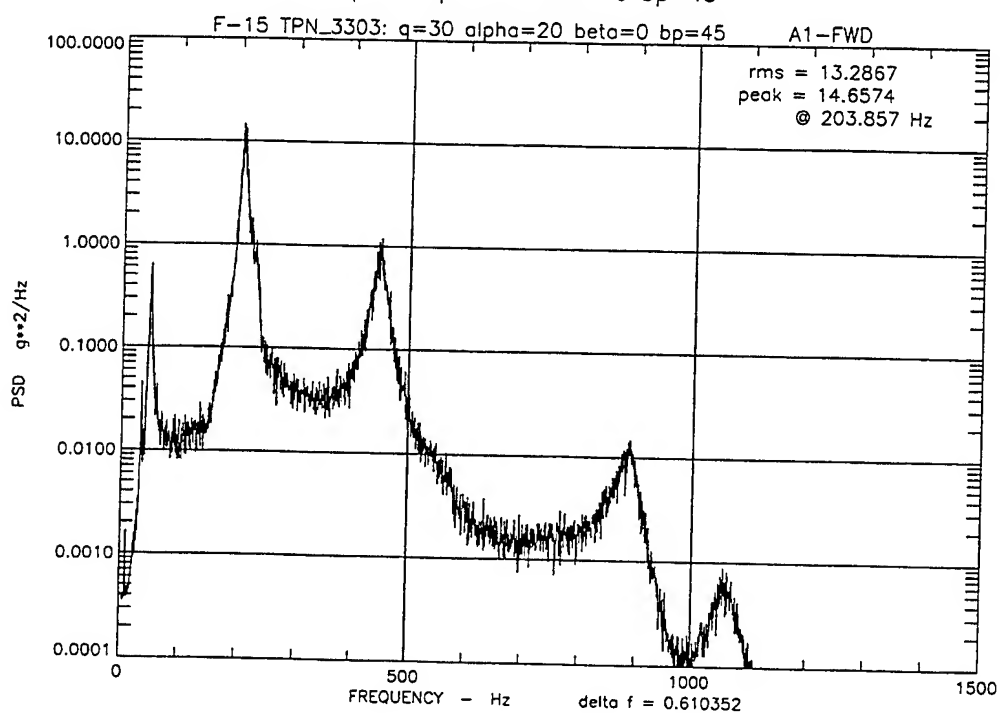




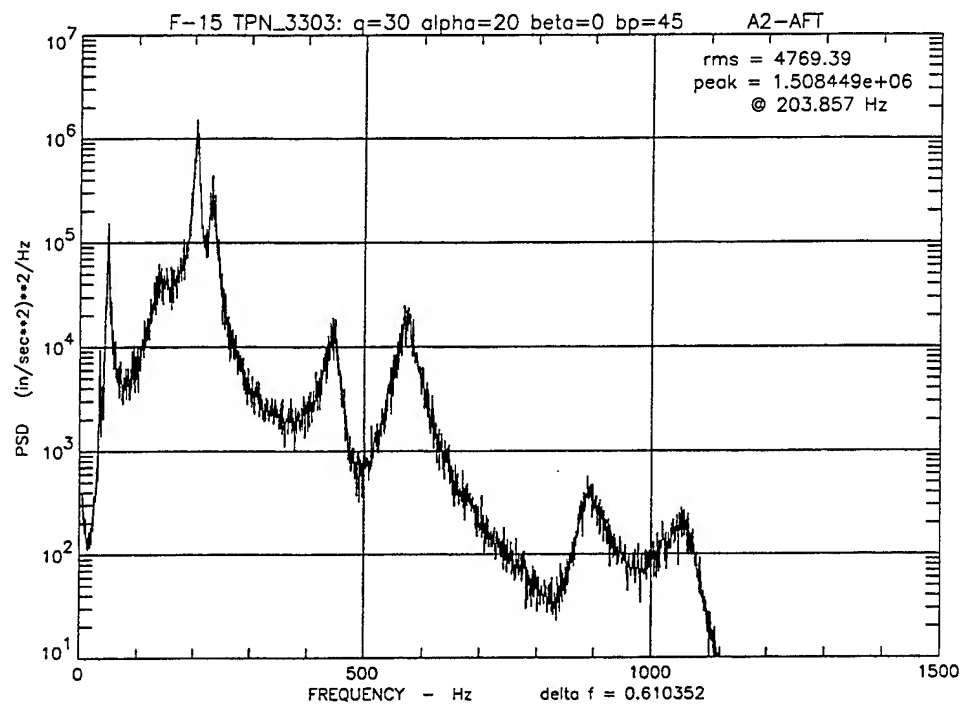
F-15 TPN\_3303: q=30 alpha=20 beta=0 bp=45



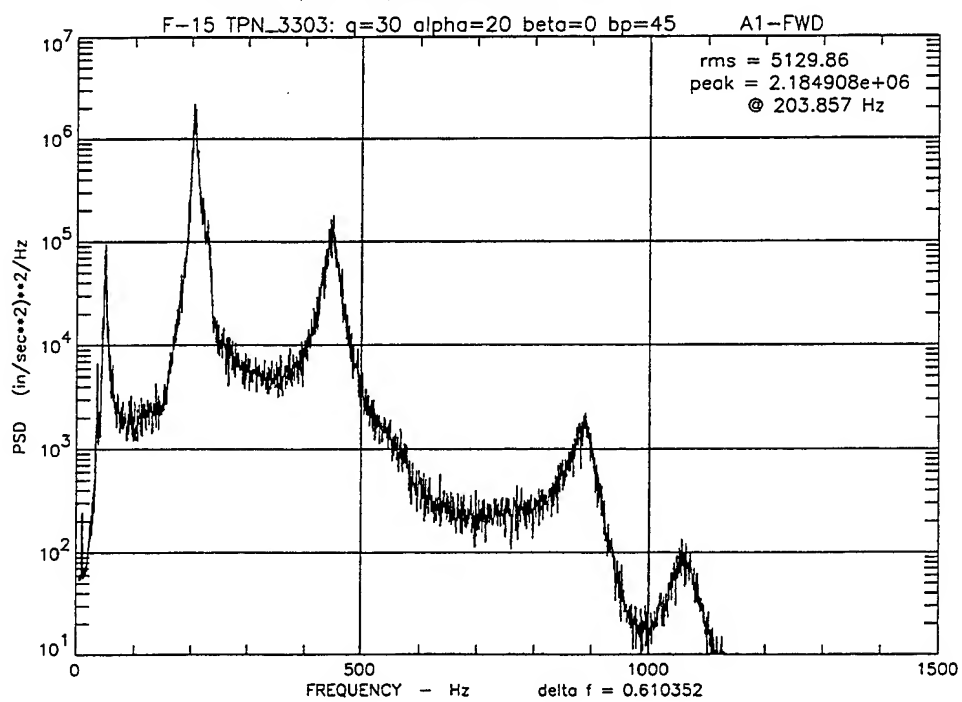
F-15 TPN\_3303: q=30 alpha=20 beta=0 bp=45



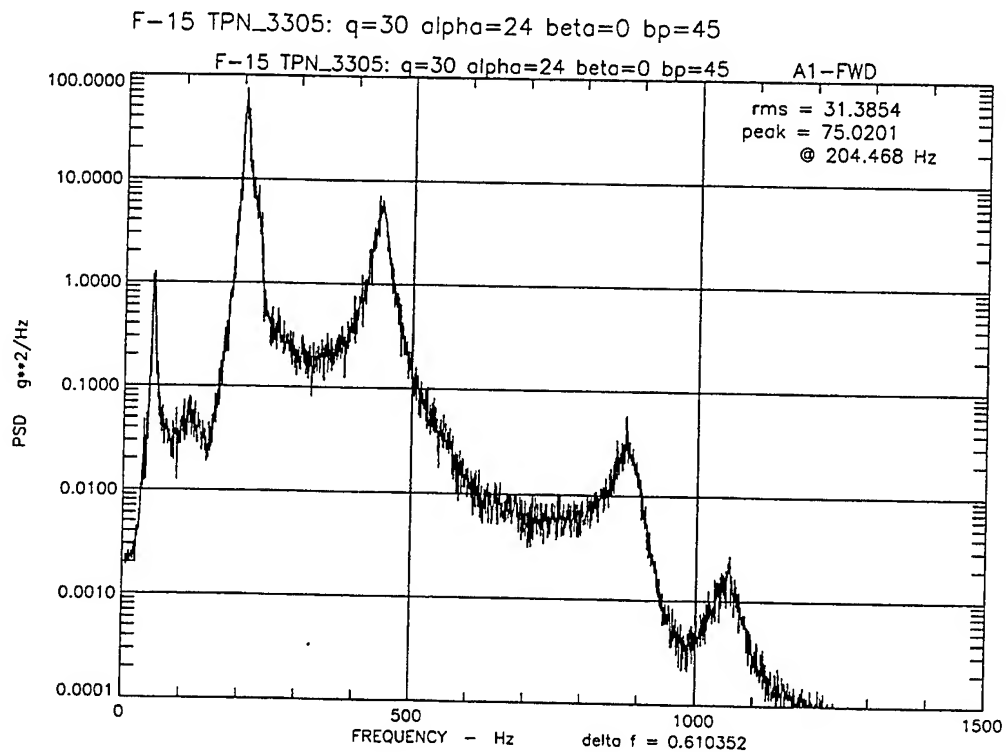
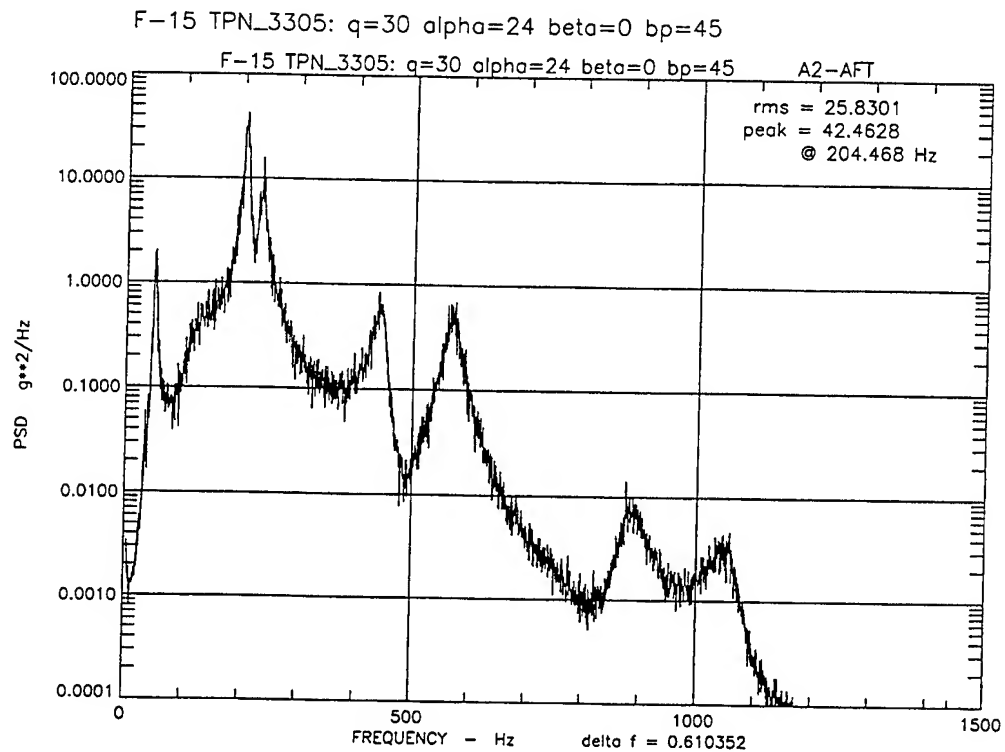
F-15 TPN\_3303: q=30 alpha=20 beta=0 bp=45



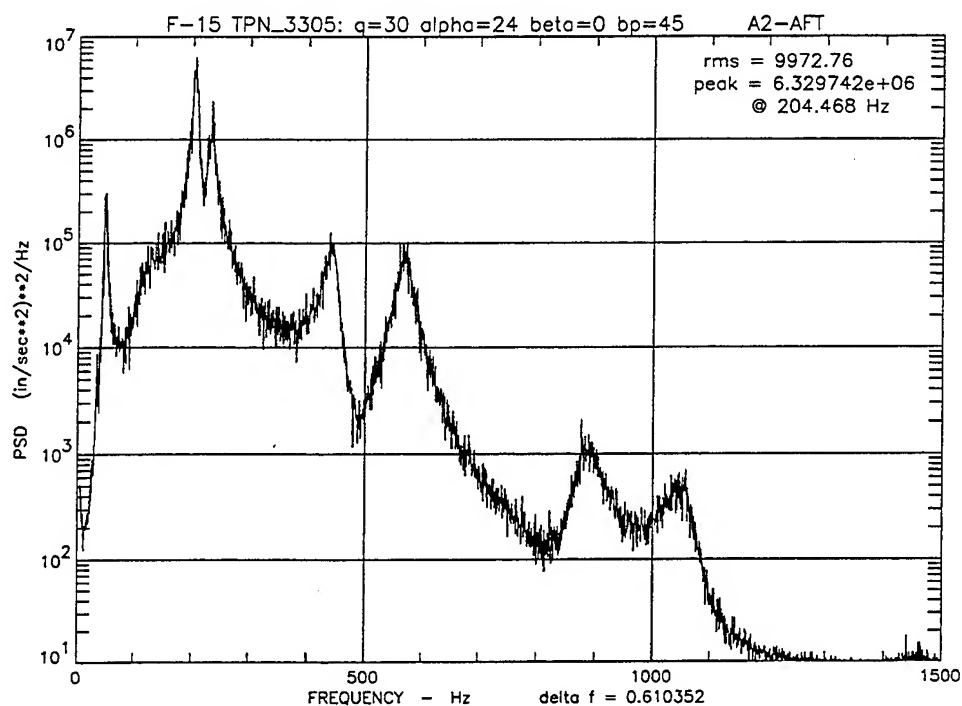
F-15 TPN\_3303: q=30 alpha=20 beta=0 bp=45



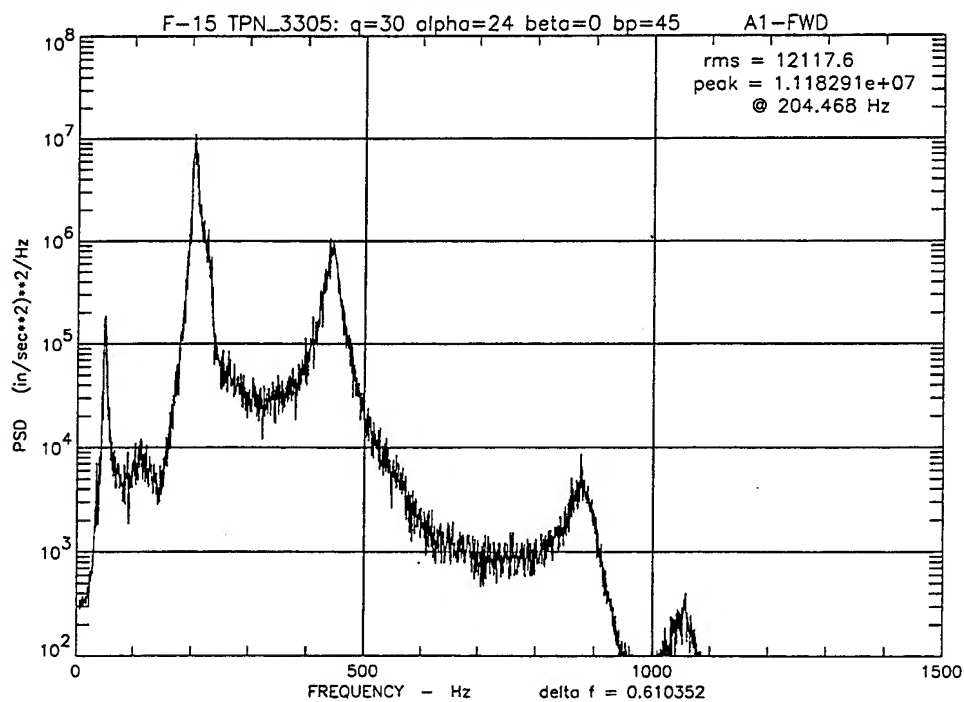




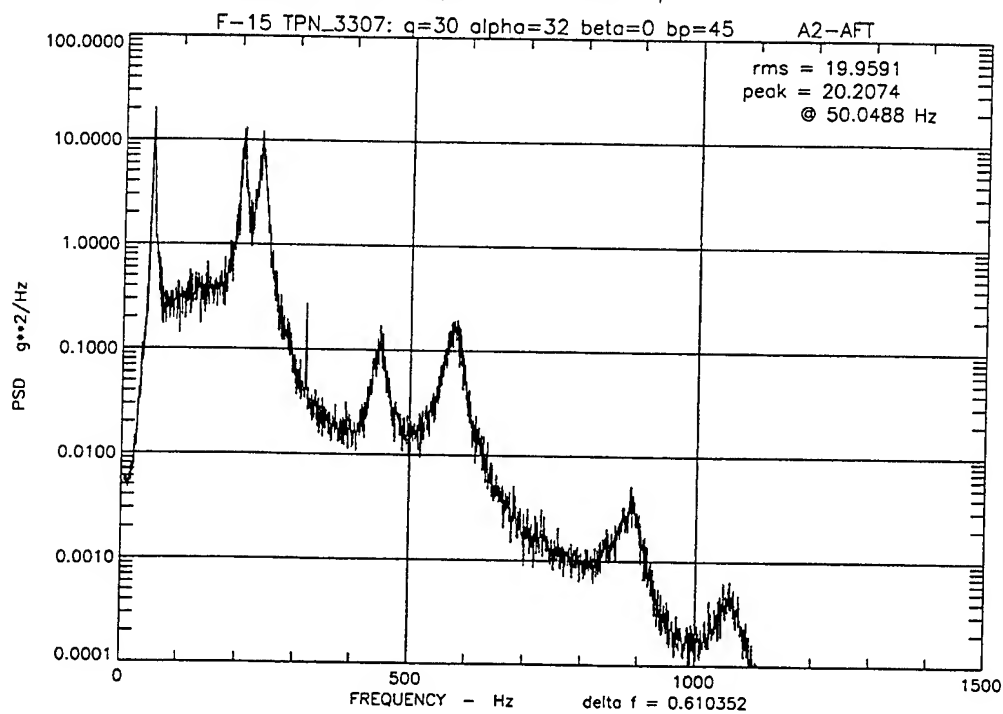
F-15 TPN\_3305: q=30 alpha=24 beta=0 bp=45



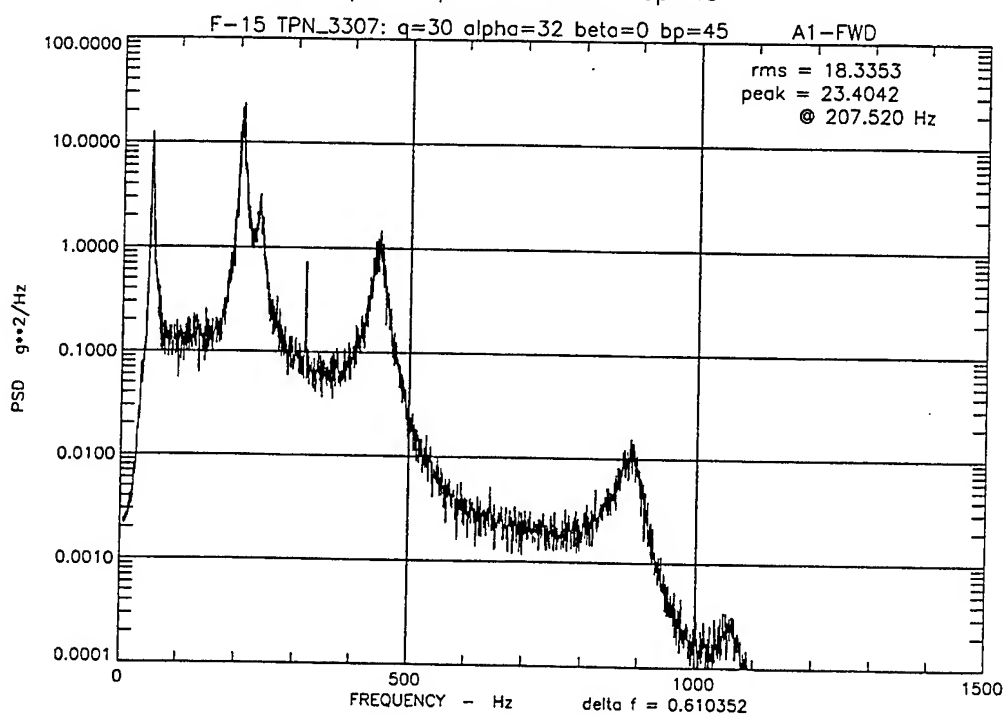
F-15 TPN\_3305: q=30 alpha=24 beta=0 bp=45

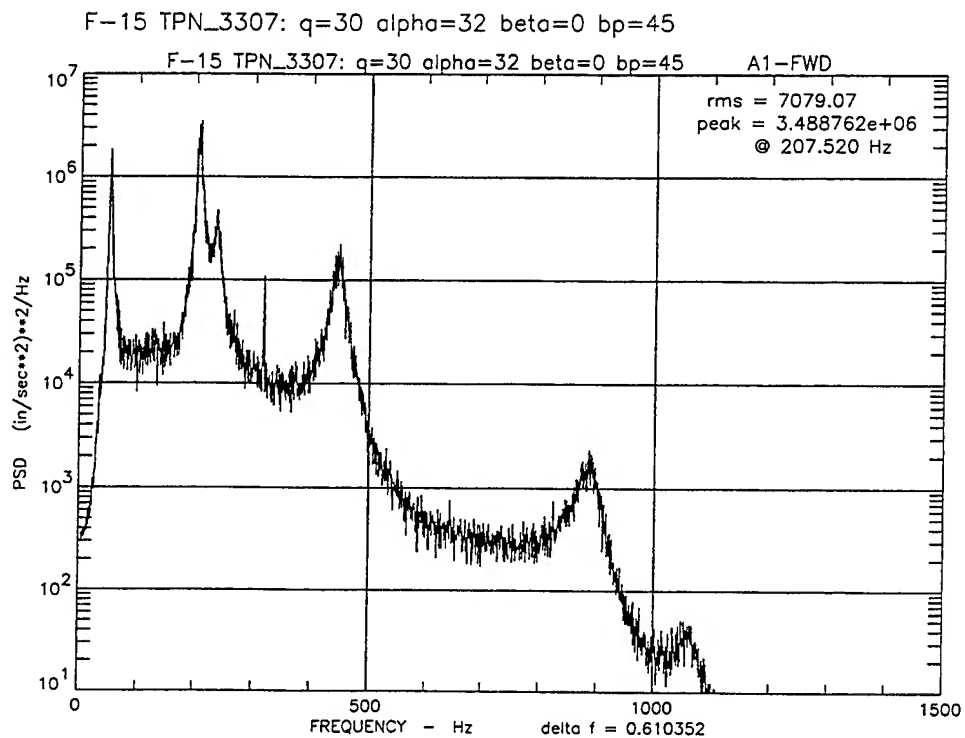
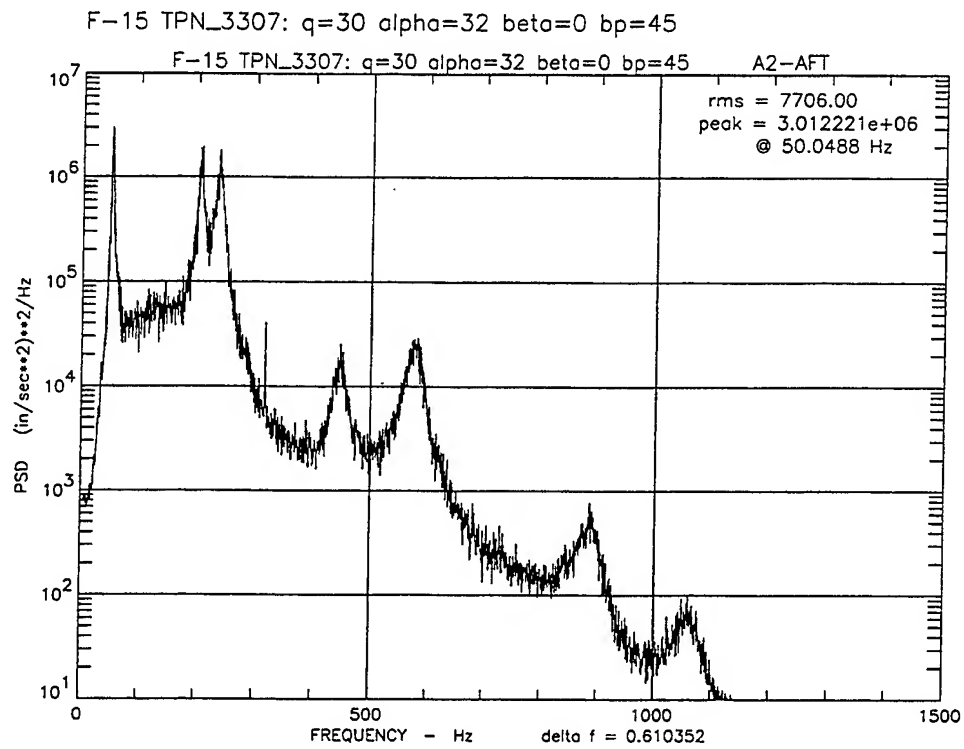


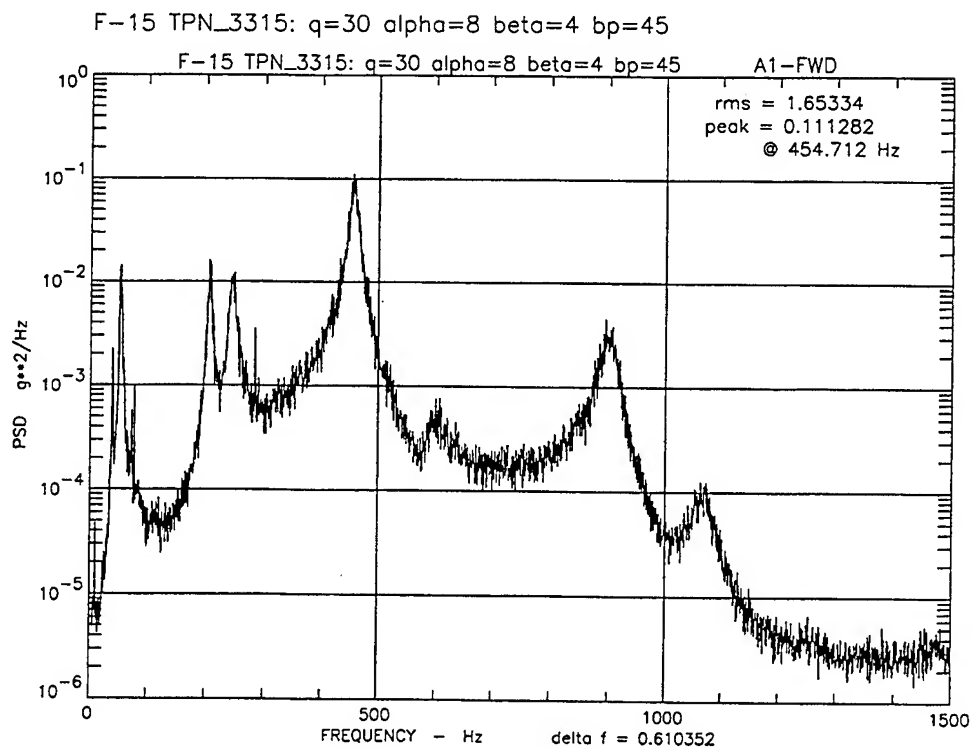
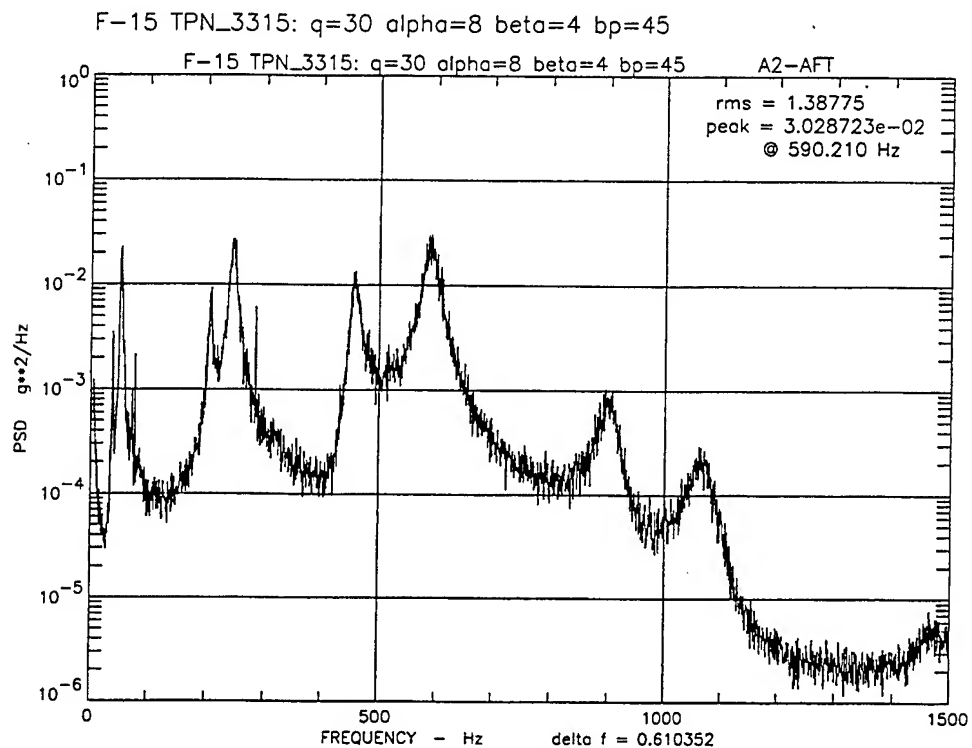
F-15 TPN\_3307: q=30 alpha=32 beta=0 bp=45

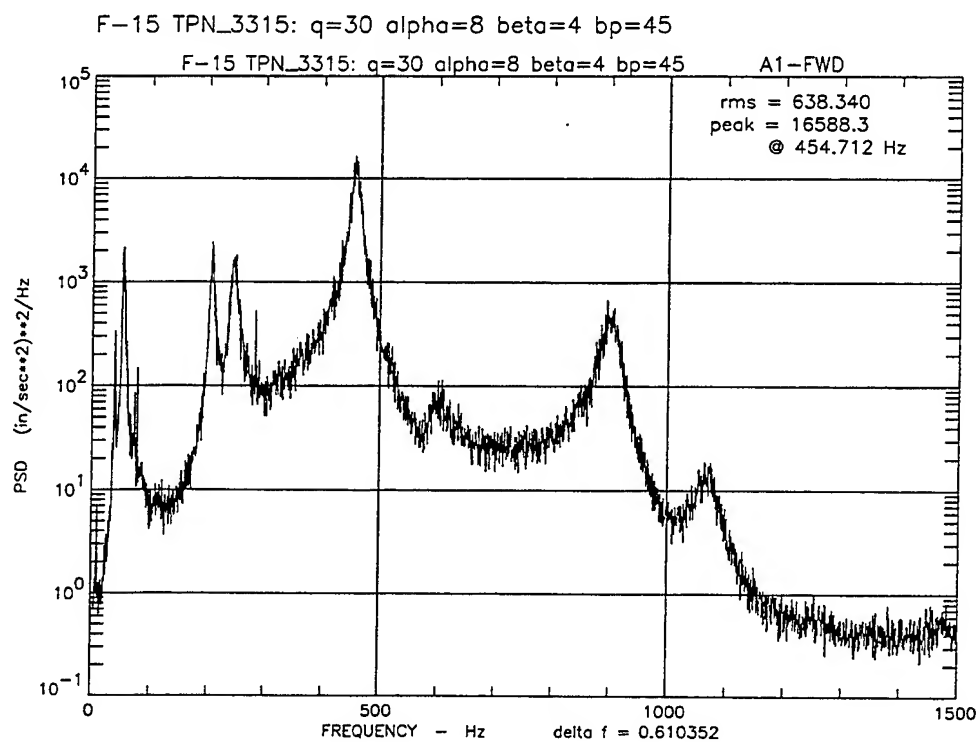
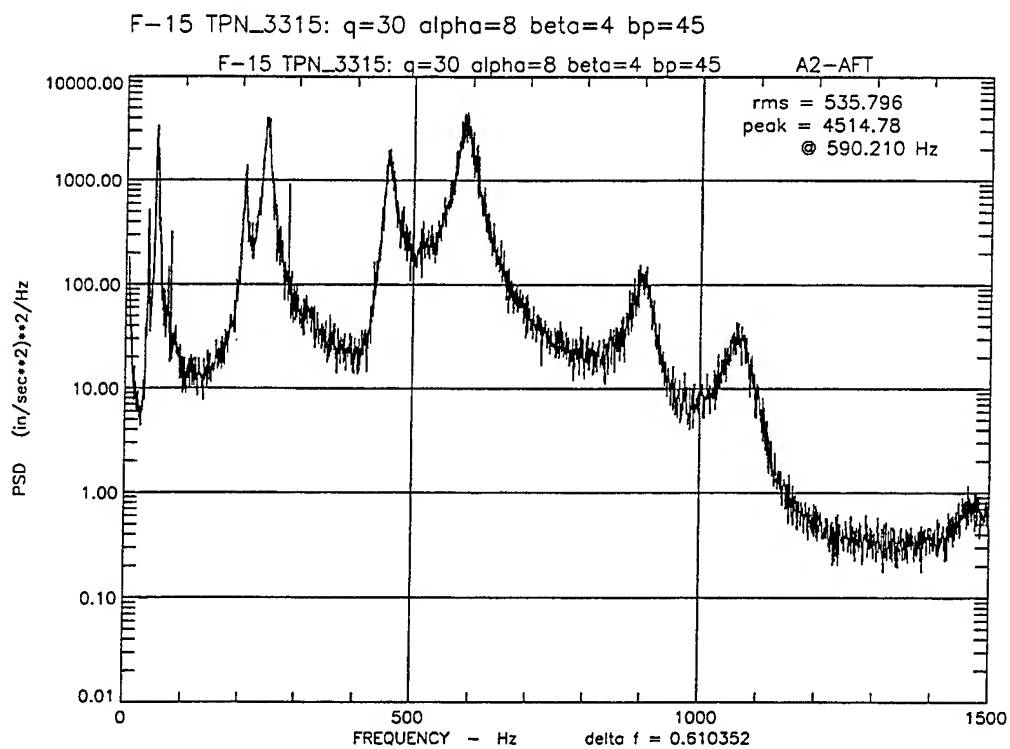


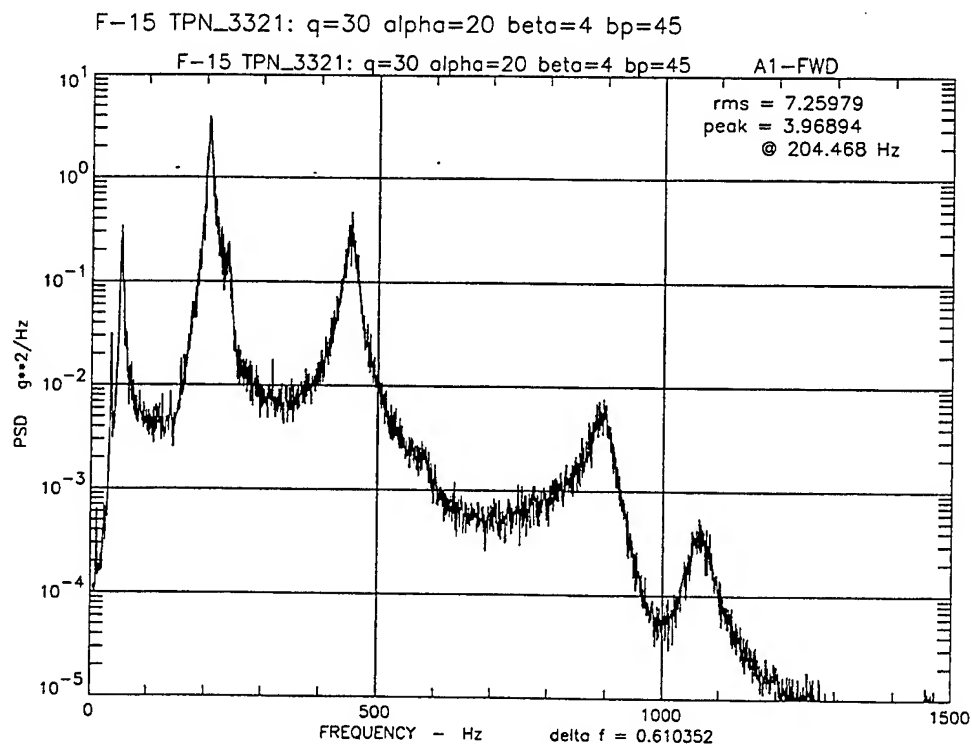
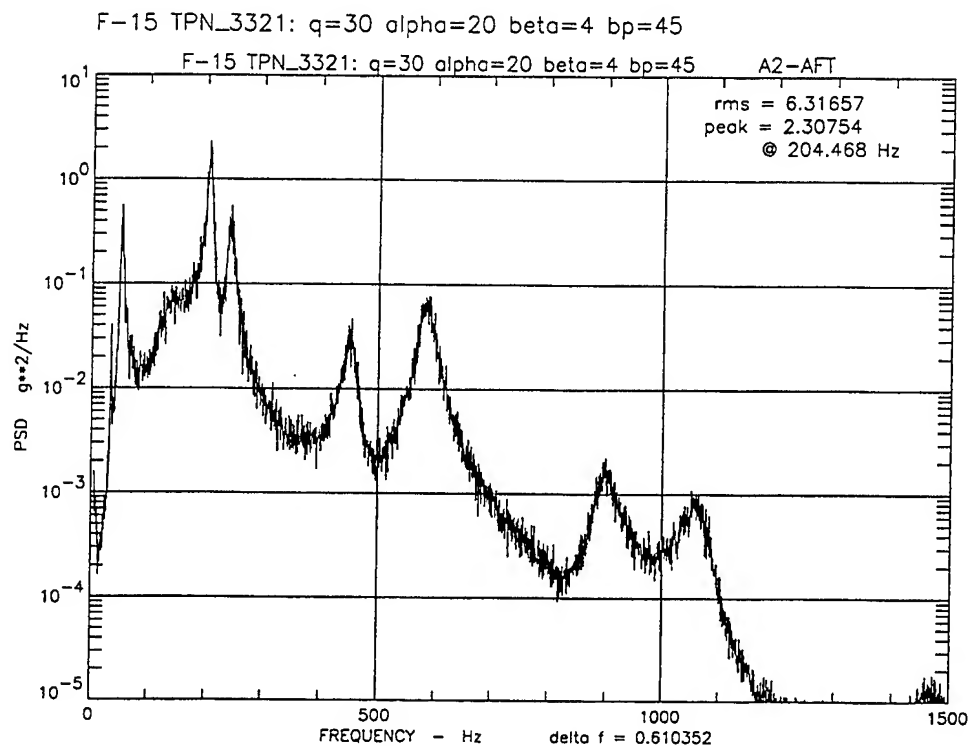
F-15 TPN\_3307: q=30 alpha=32 beta=0 bp=45

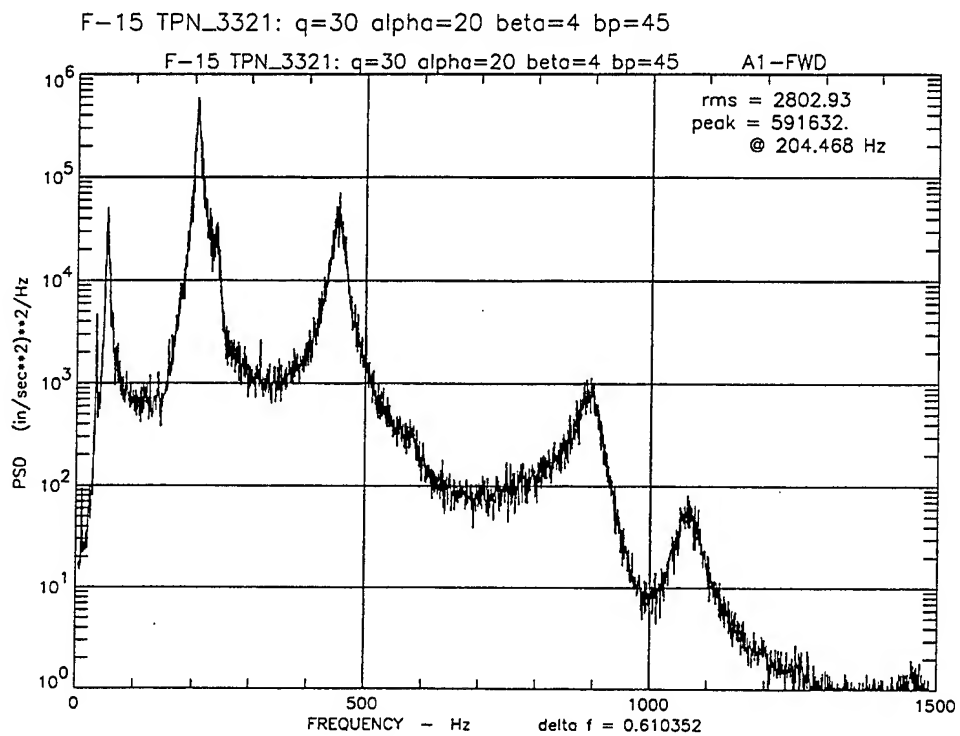
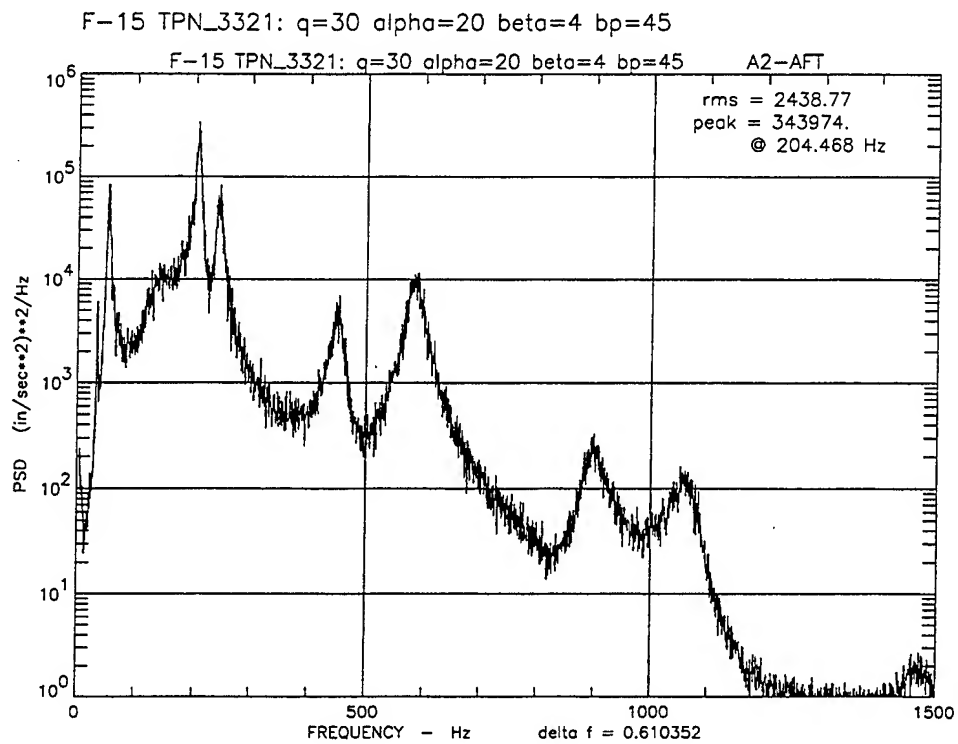






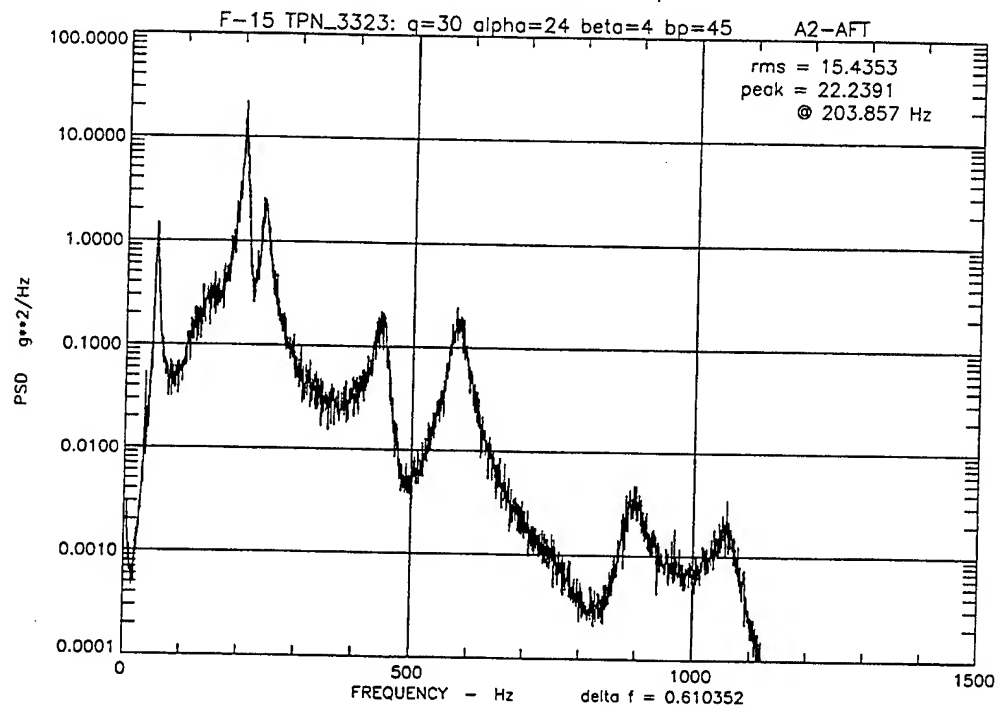




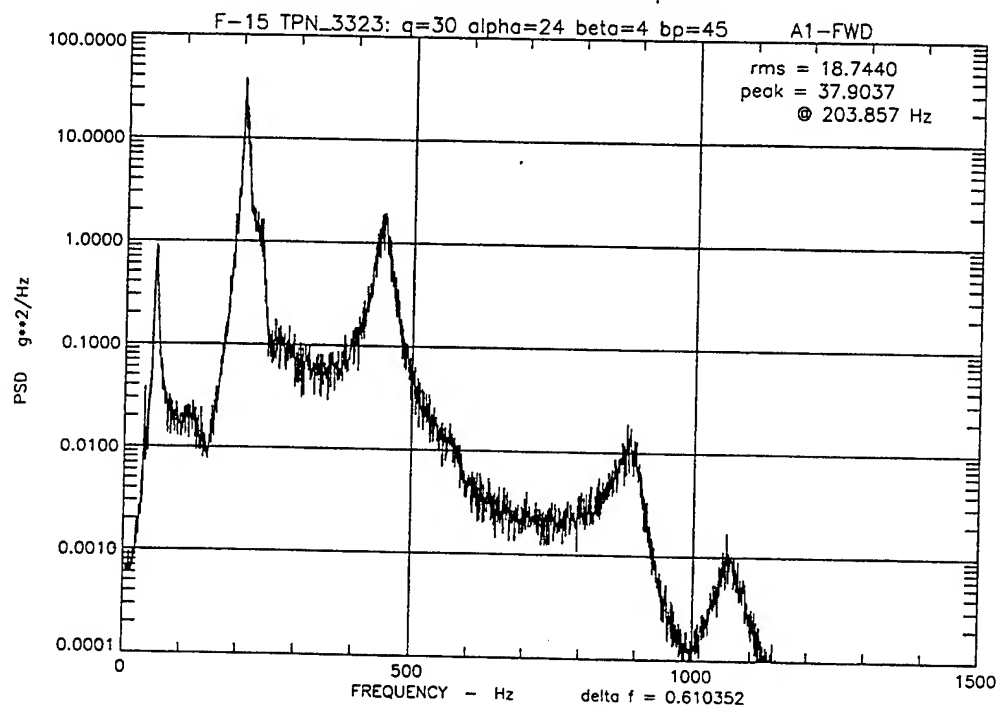


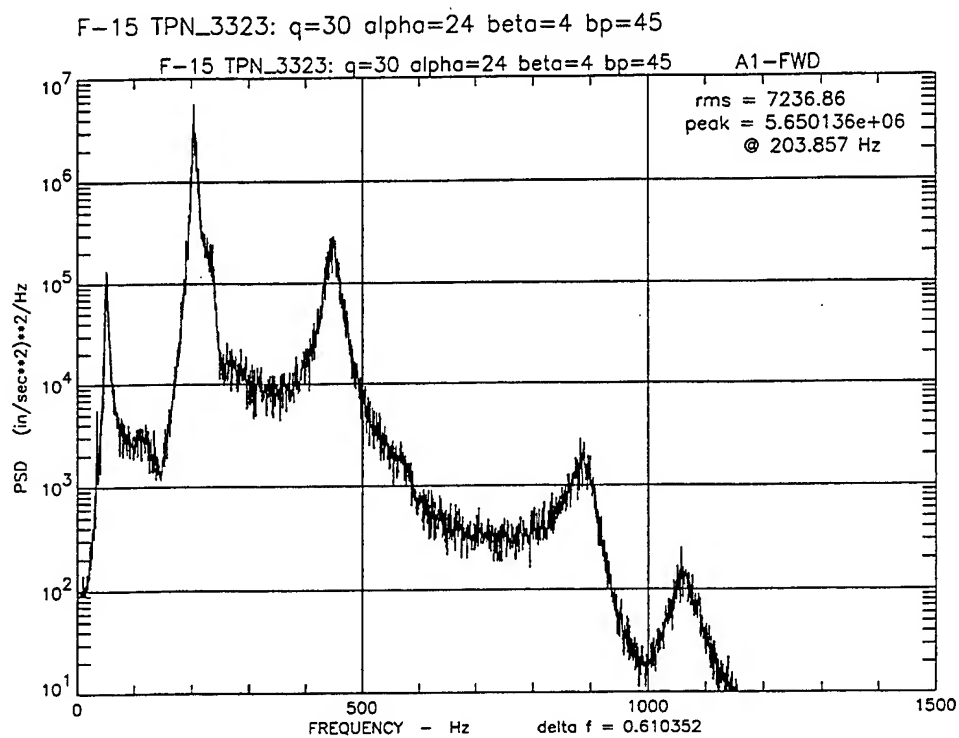
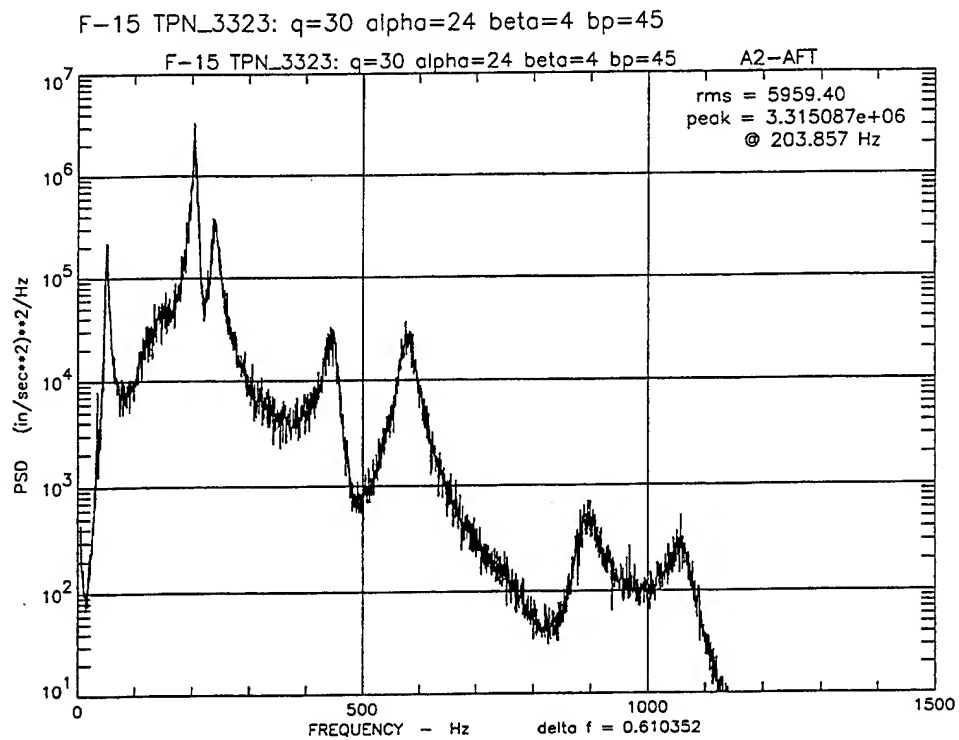


F-15 TPN\_3323: q=30 alpha=24 beta=4 bp=45

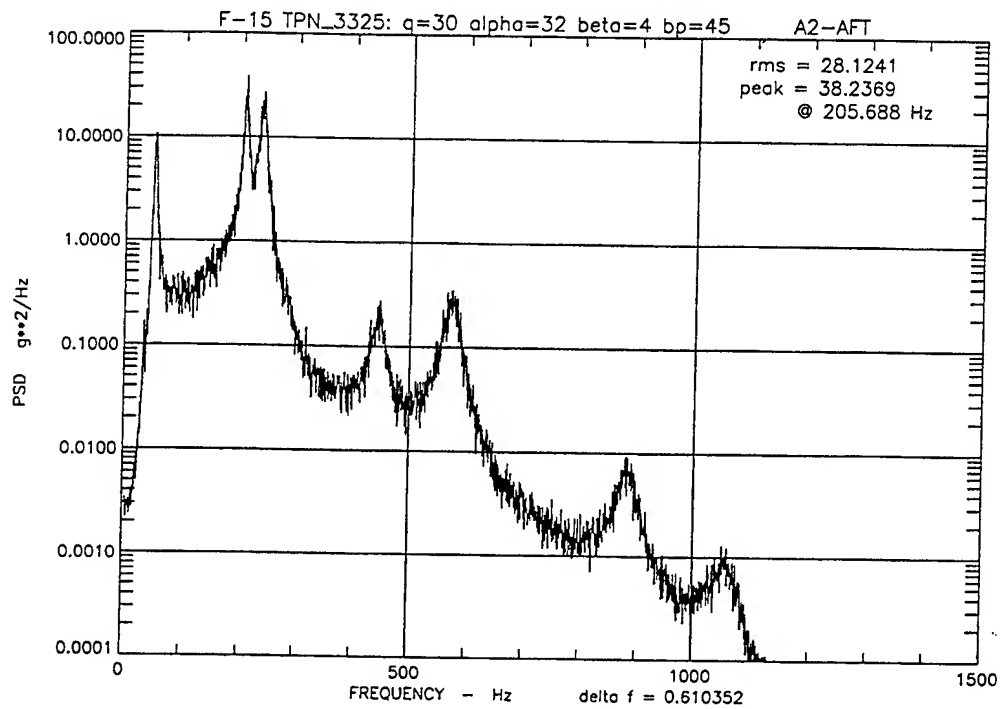


F-15 TPN\_3323: q=30 alpha=24 beta=4 bp=45

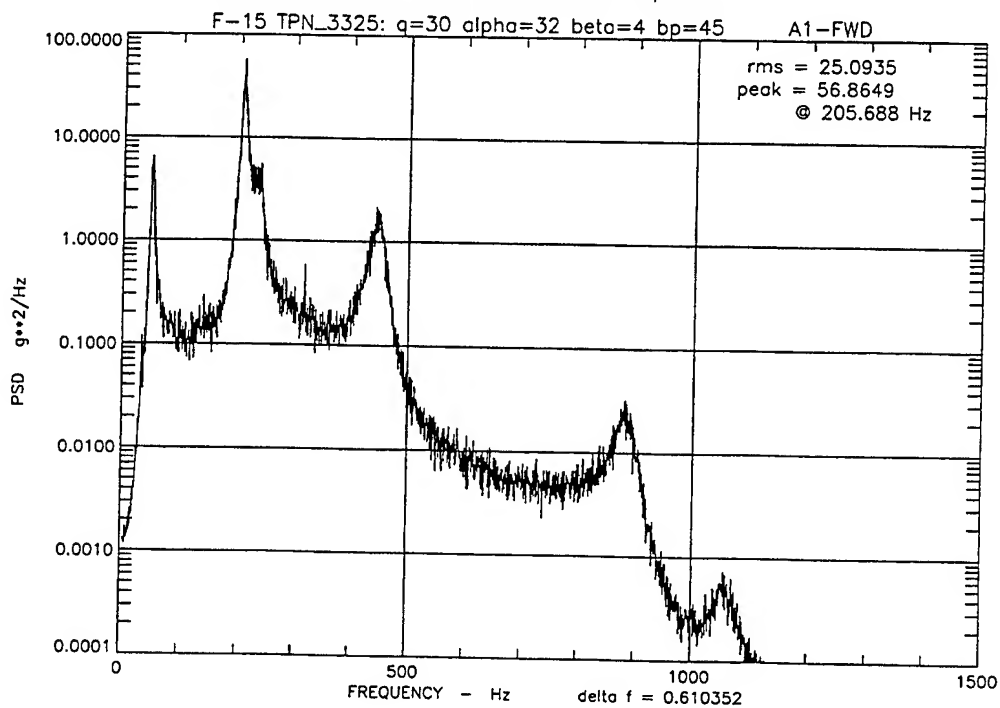




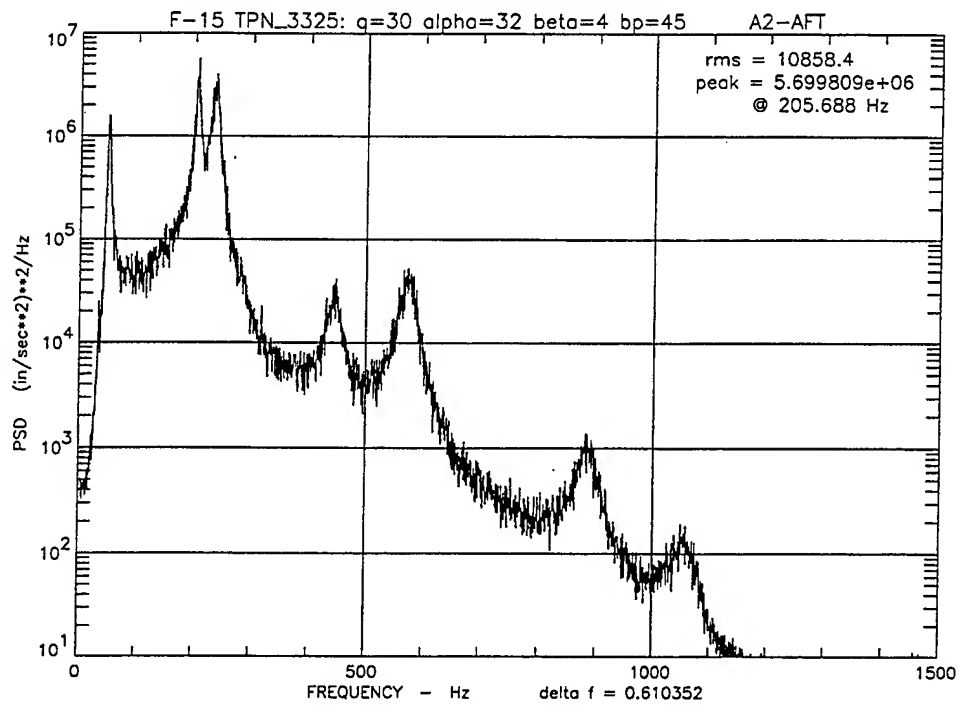
F-15 TPN\_3325: q=30 alpha=32 beta=4 bp=45



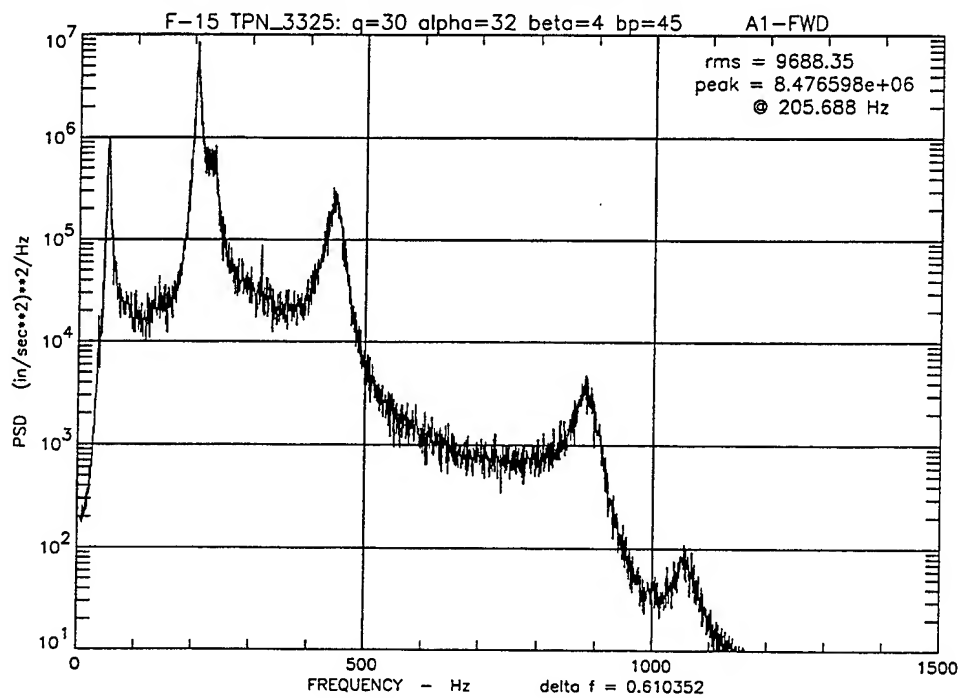
F-15 TPN\_3325: q=30 alpha=32 beta=4 bp=45



F-15 TPN\_3325: q=30 alpha=32 beta=4 bp=45



F-15 TPN\_3325: q=30 alpha=32 beta=4 bp=45



**FLEXIBLE TAIL RESPONSE  
ACCELERATION DATA**

**Q= 30 PSF**

**PSD GRAPHS**

**4.1.2.2 BENDING(LINEAR AT EA) beta= 0, +4, -4 Deg, WBP = 0, 45 psi**

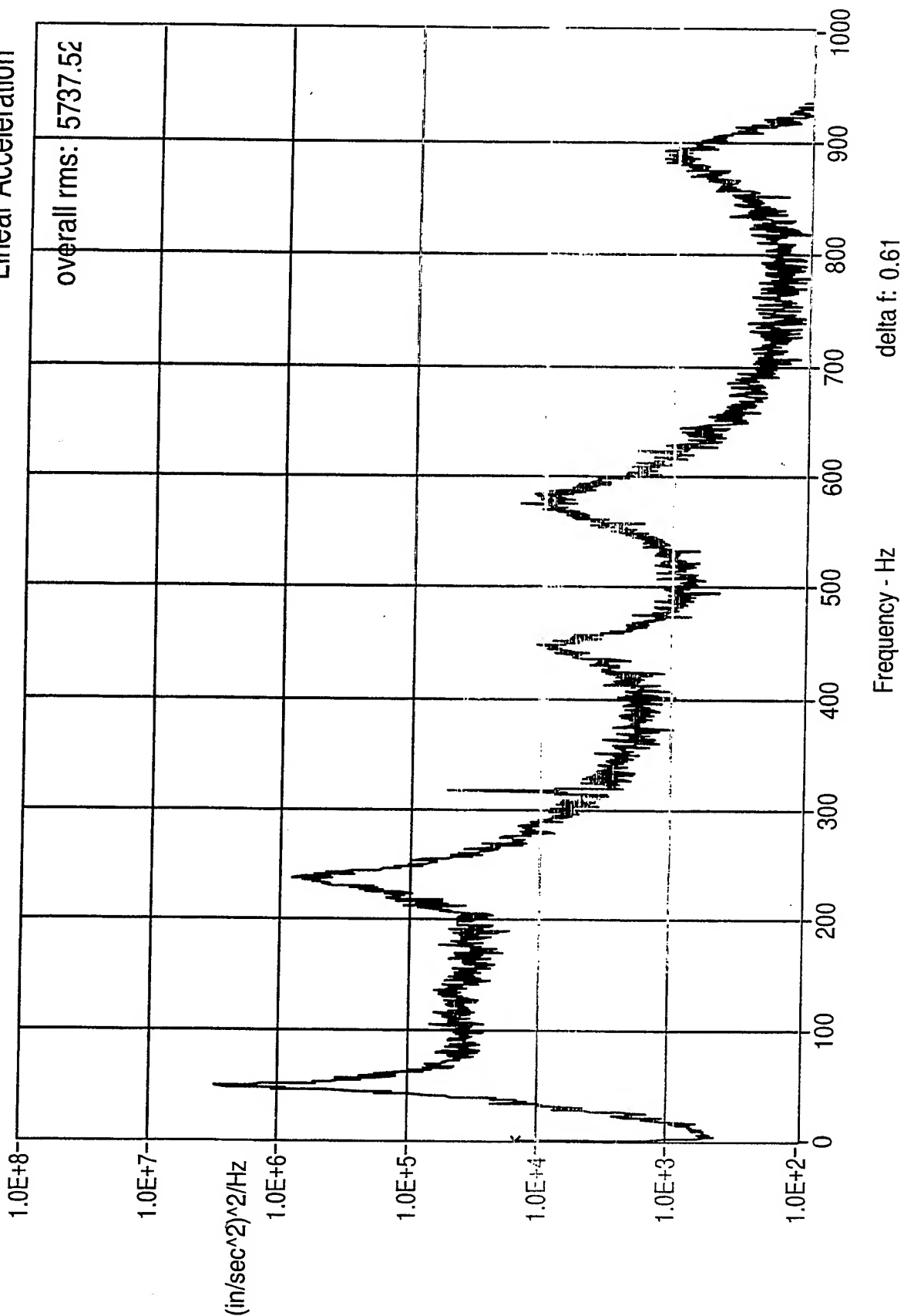
**ALPHAS = 8, 20, 24, 32 DEG**

( note, the dimensional graphs,  $(\text{in/sec})^2/\text{hz}$  are in a block, while the graphs  $(\text{g's})^2/\text{hz}$  are in a second block. data is further blocked off by blowing pressures, with beta variation within.

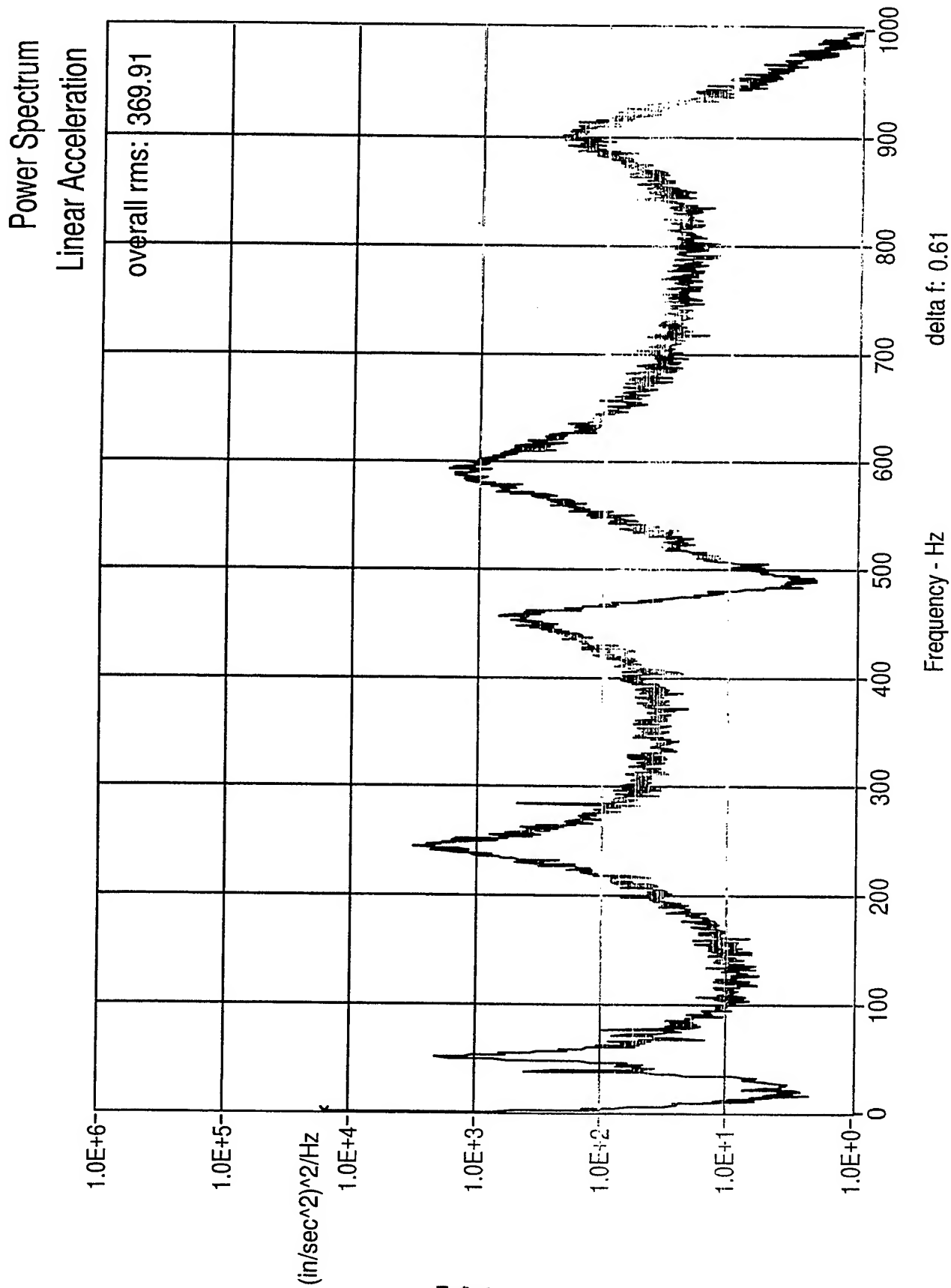
F-15 TPN\_3253: q=30 alpha=32 beta=0 bp=0

Power Spectrum

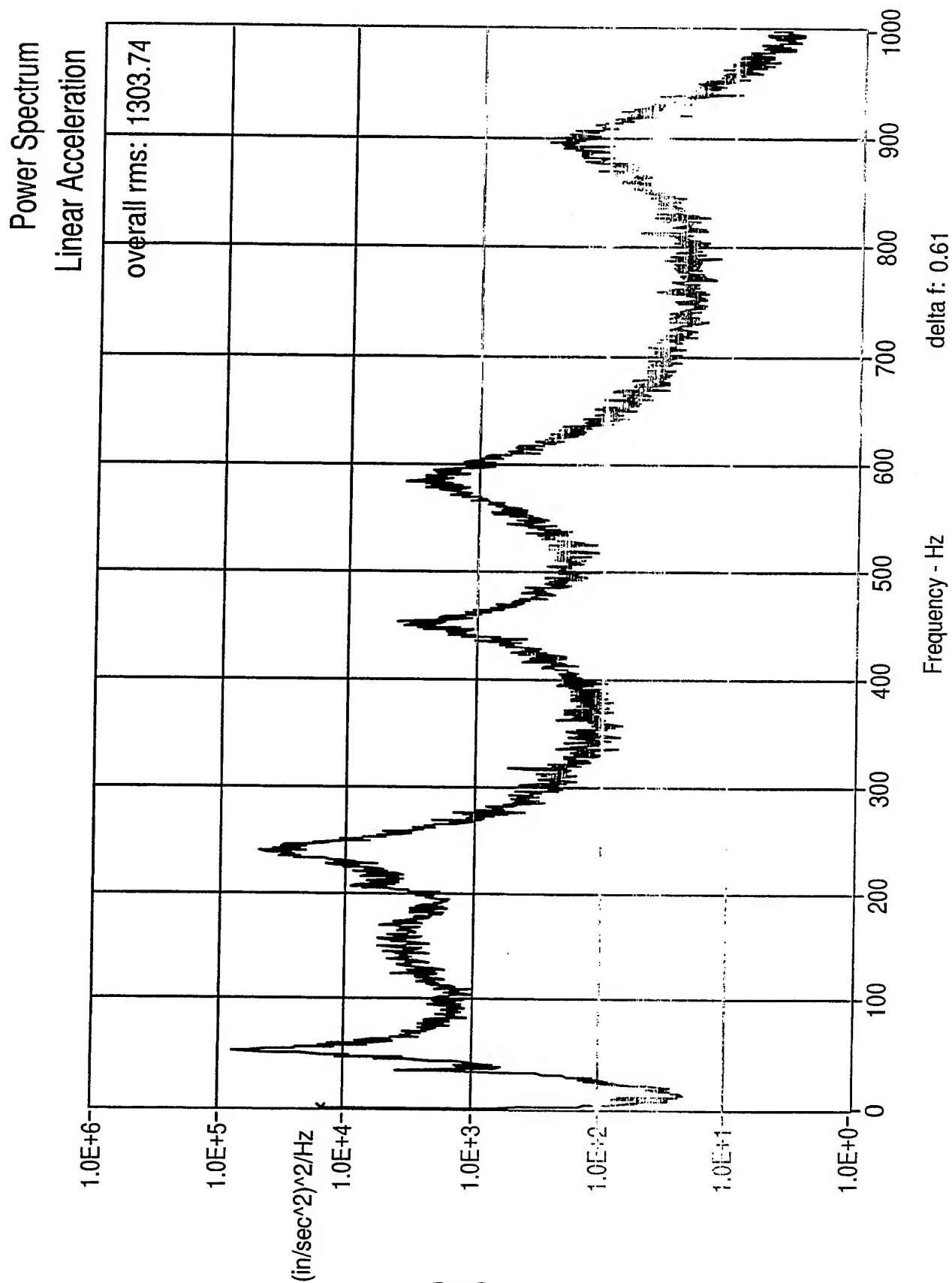
Linear Acceleration



F-15 TPN\_3261: q=30 alpha=8 beta=4 bp=0

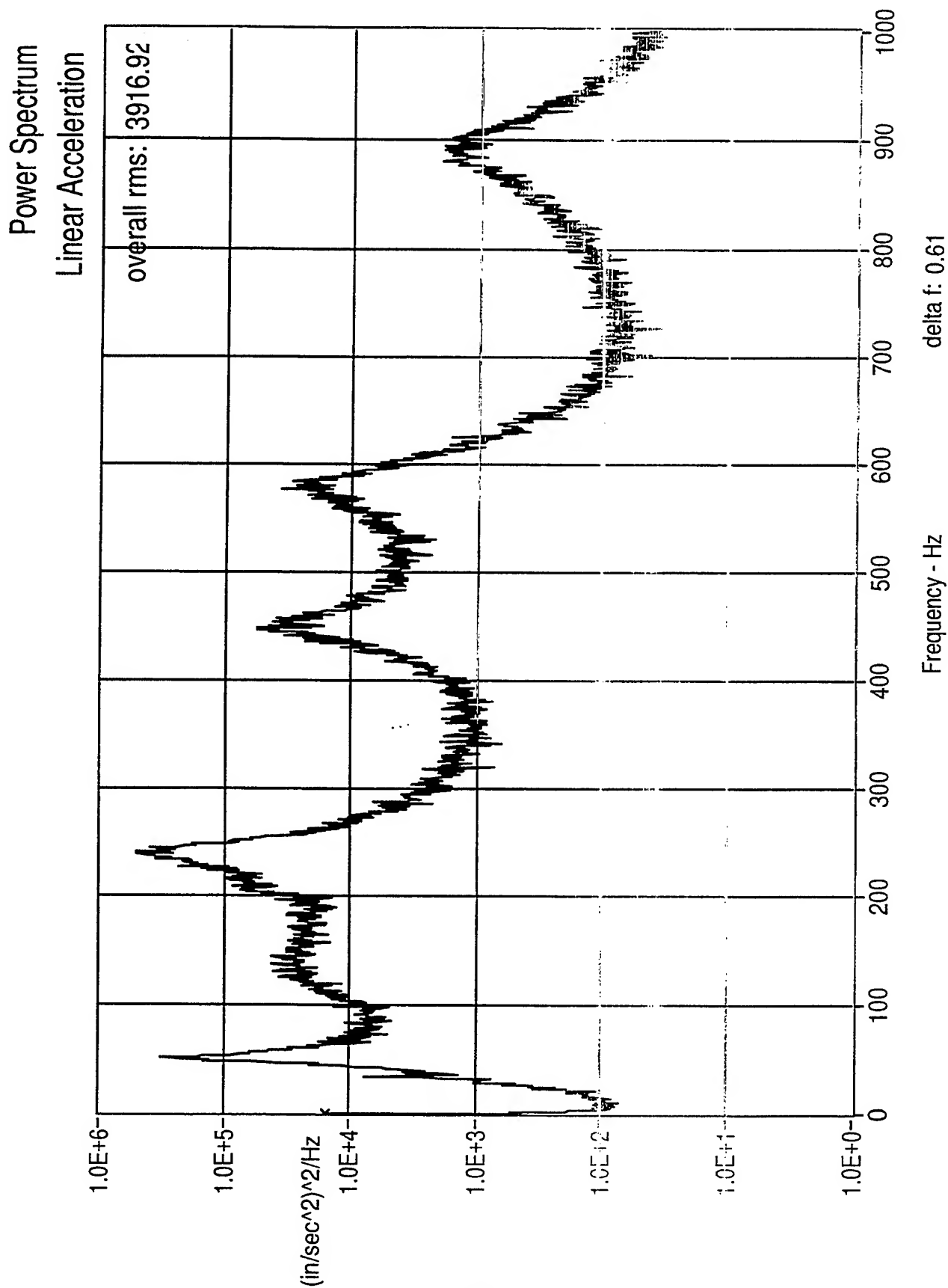


F-15 TPN\_3267: q=30 alpha=20 beta=4 bp=0

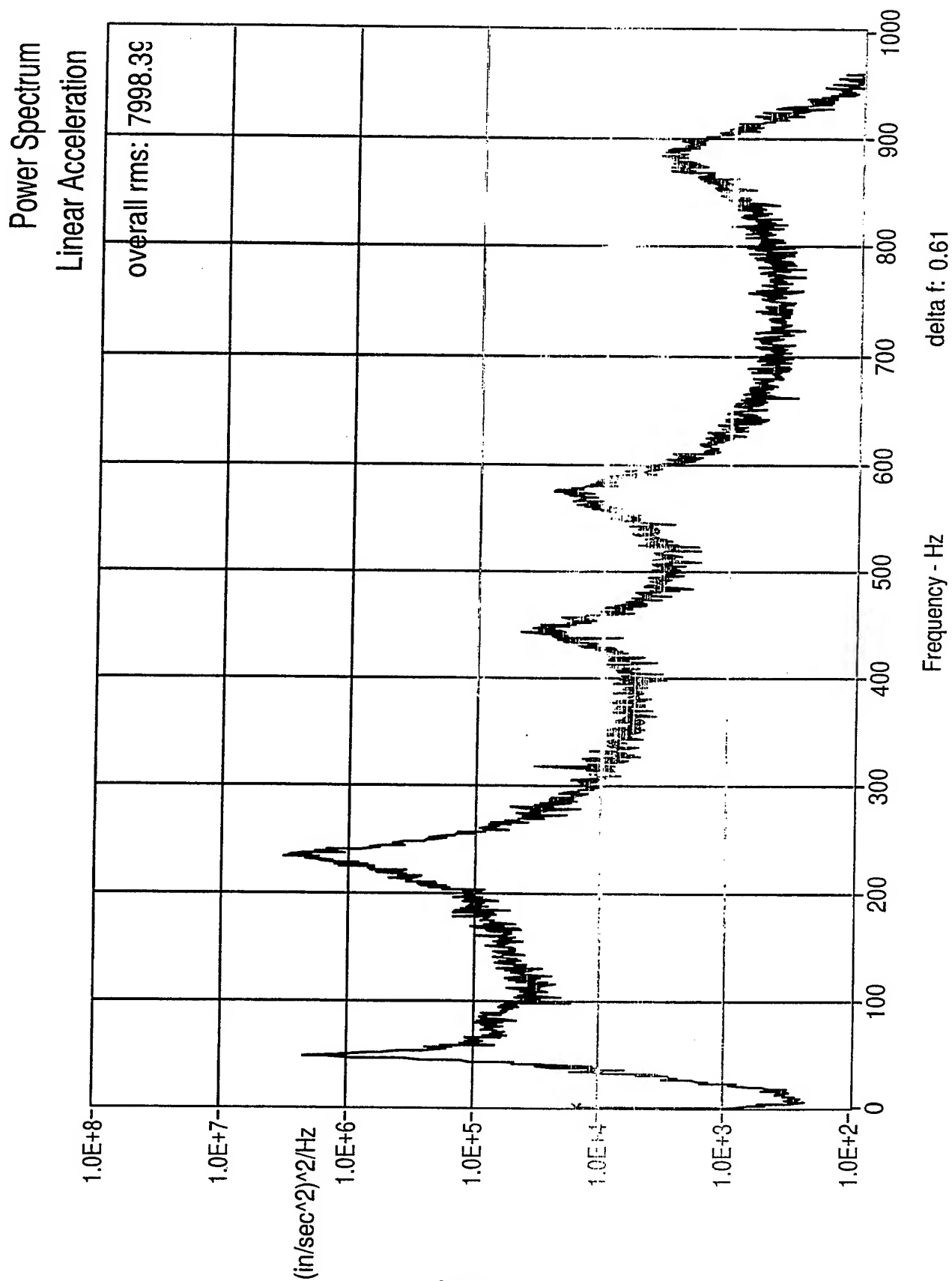




F-15 TPN\_3269: q=30 alpha=24 beta=4 bp=0

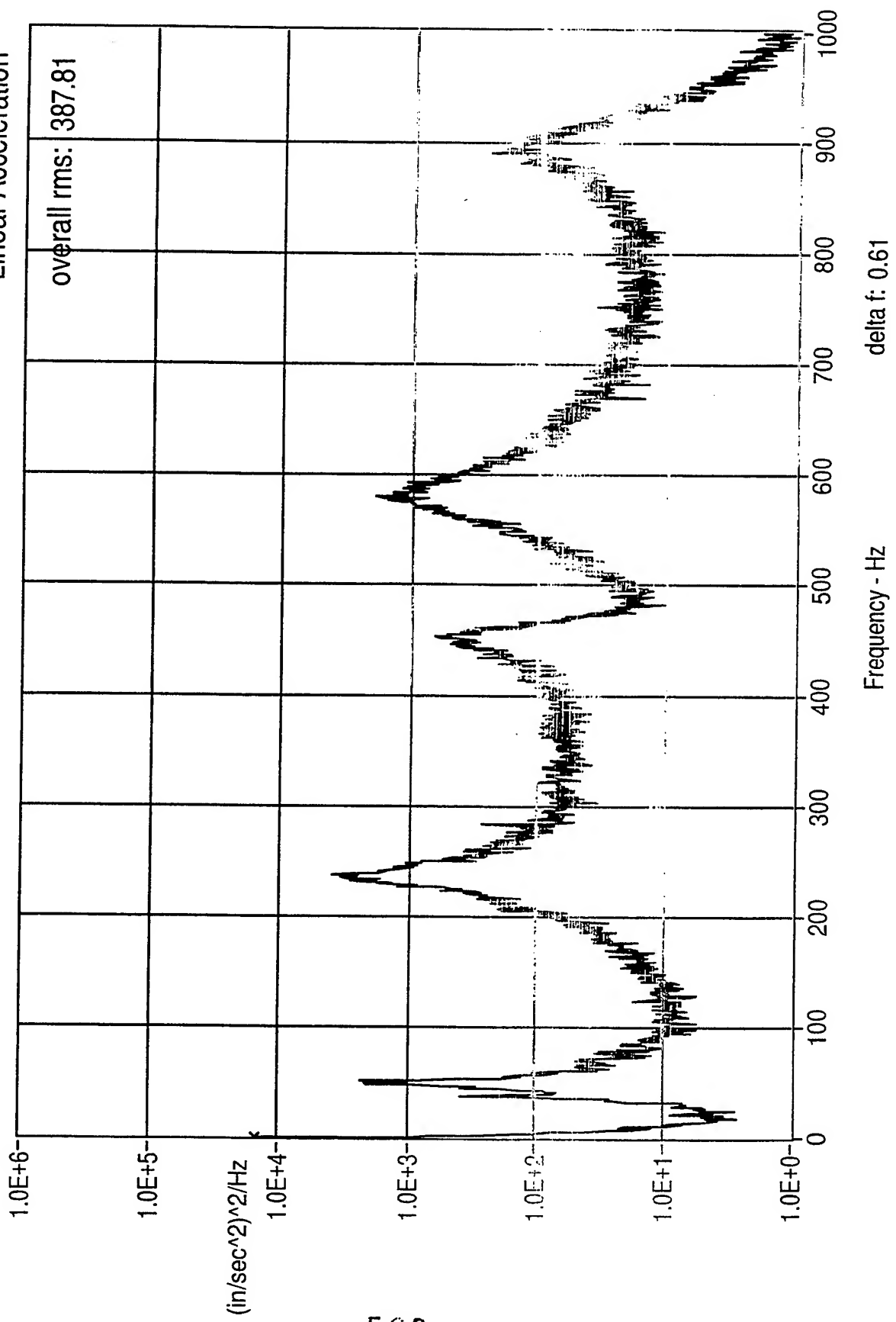


F-15 TPN\_3271: q=30 alpha=32 beta=4 bp=0

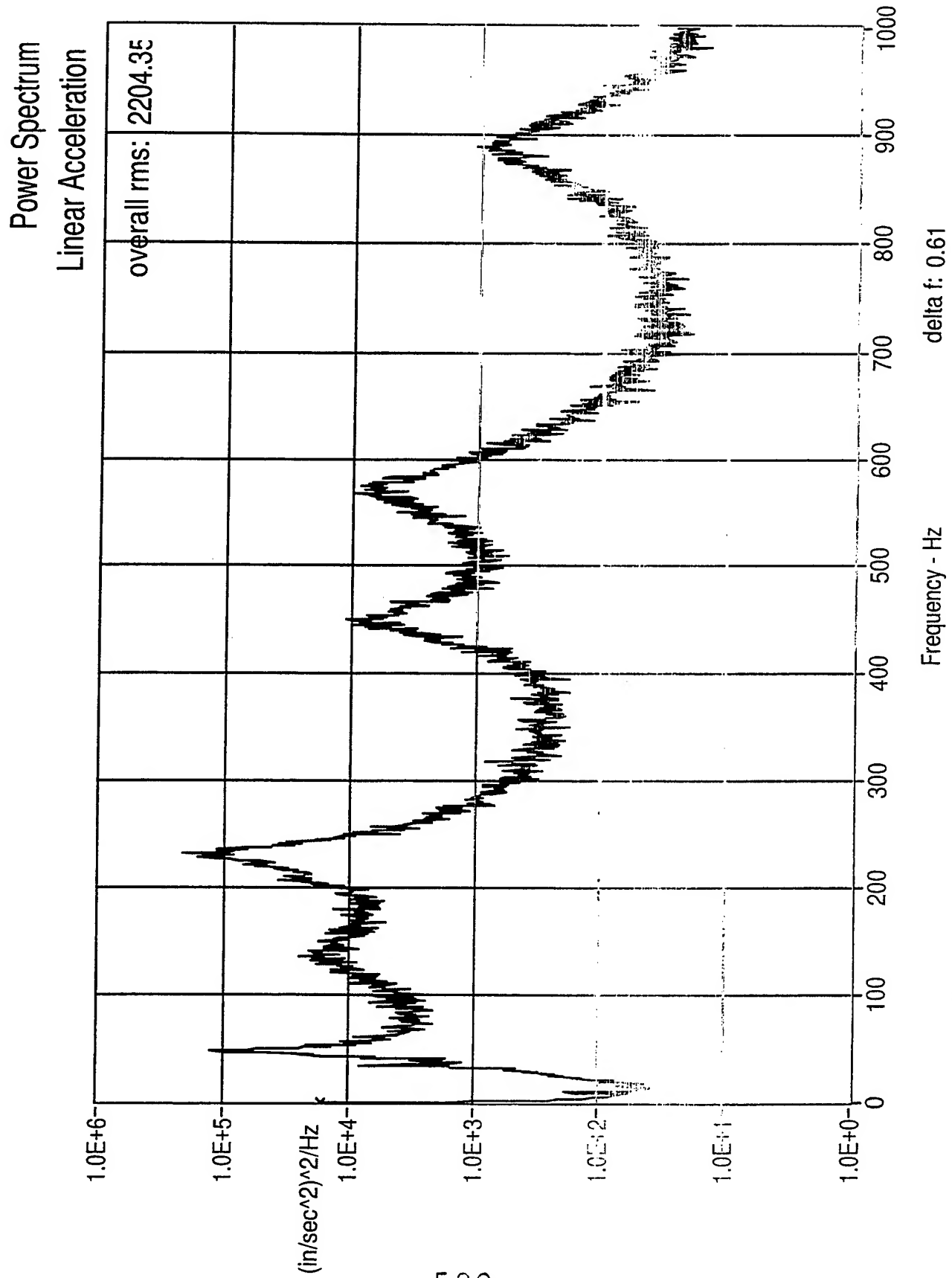


F-15 TPN\_3297: q=30 alpha=8 beta=0 bp=45

Power Spectrum  
Linear Acceleration

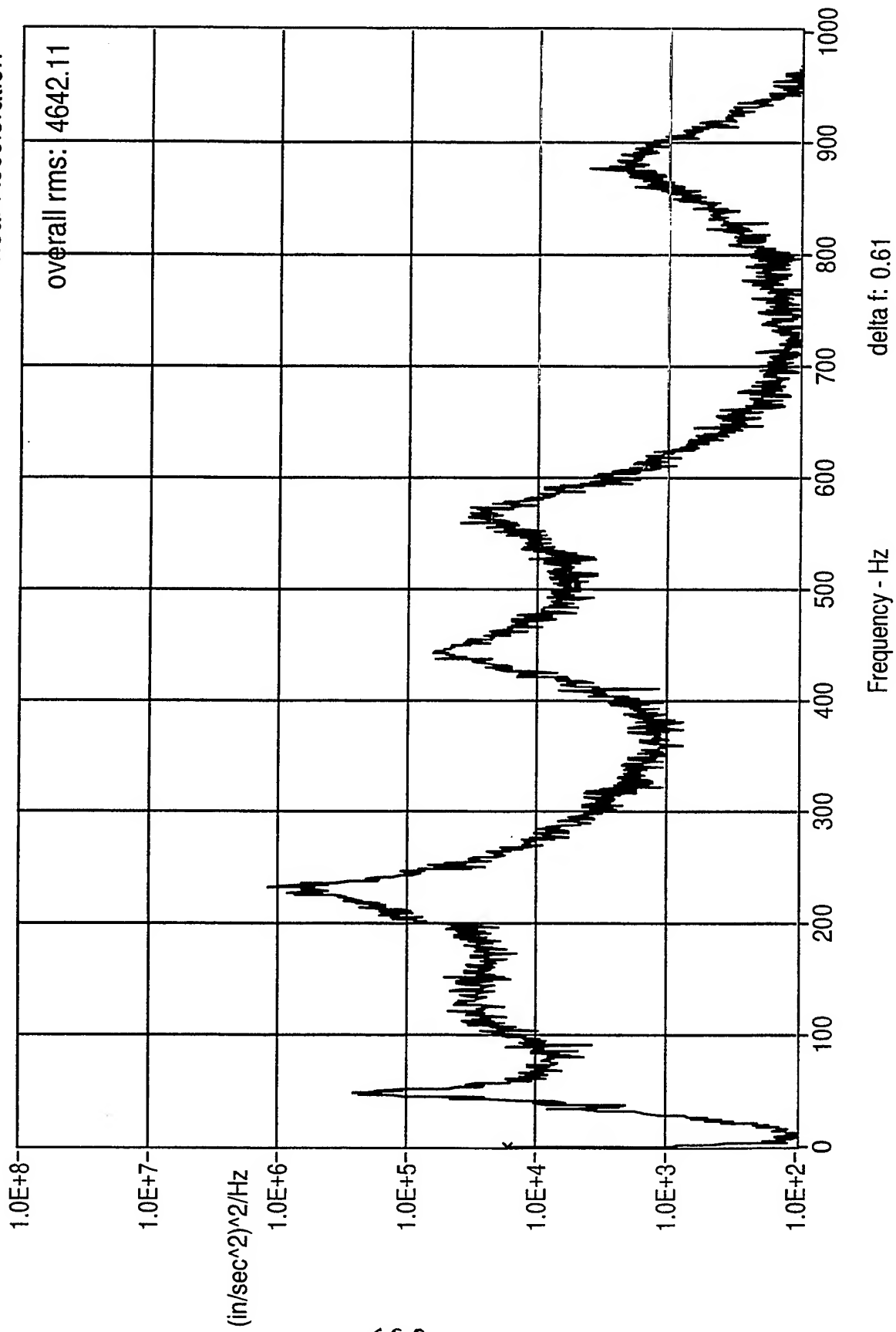


F-15 TPN\_3303: q=30 alpha=20 beta=0 bp=45



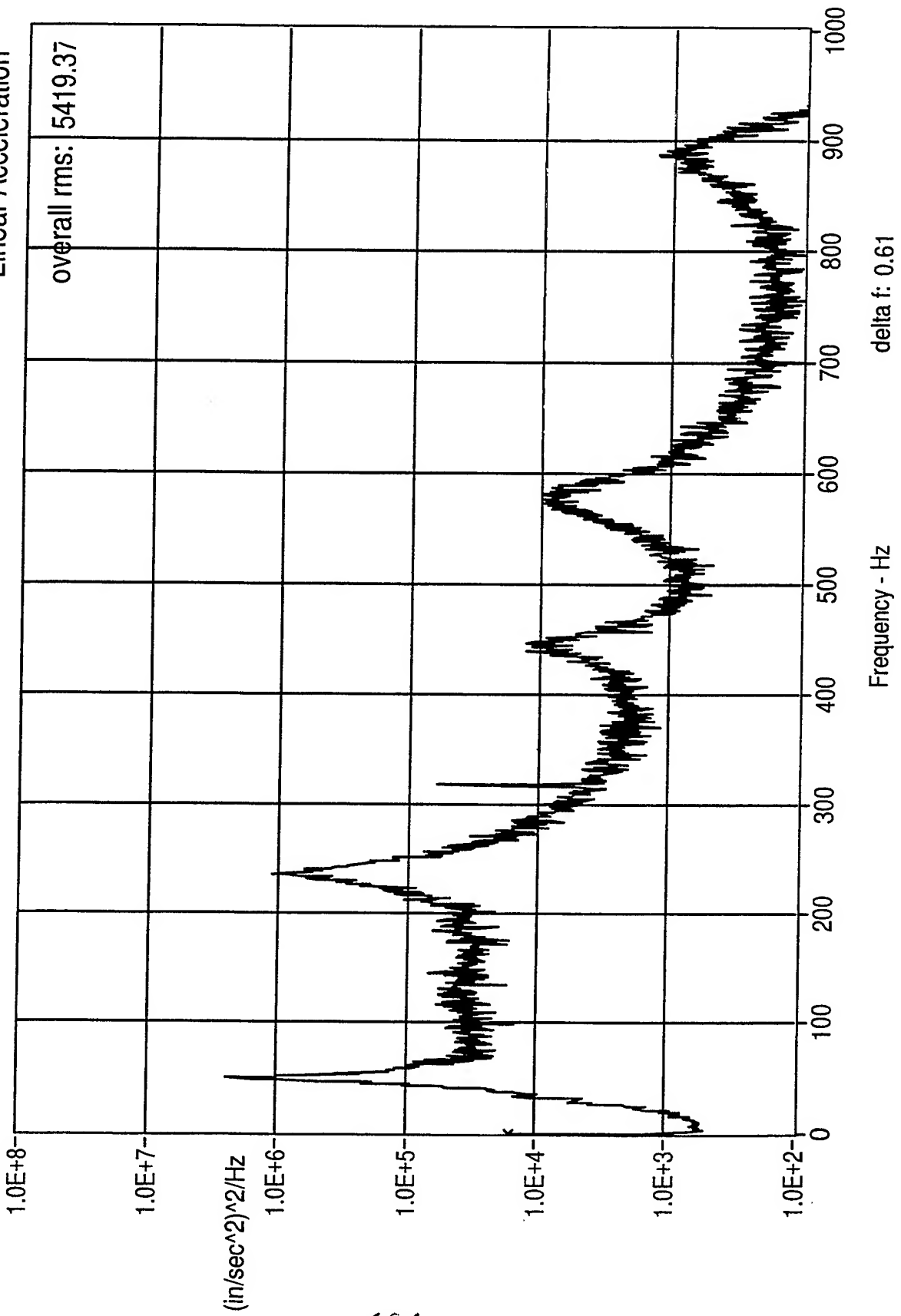
F-15 TPN\_3305: q=30 alpha=24 beta=0 bp=45

Power Spectrum  
Linear Acceleration

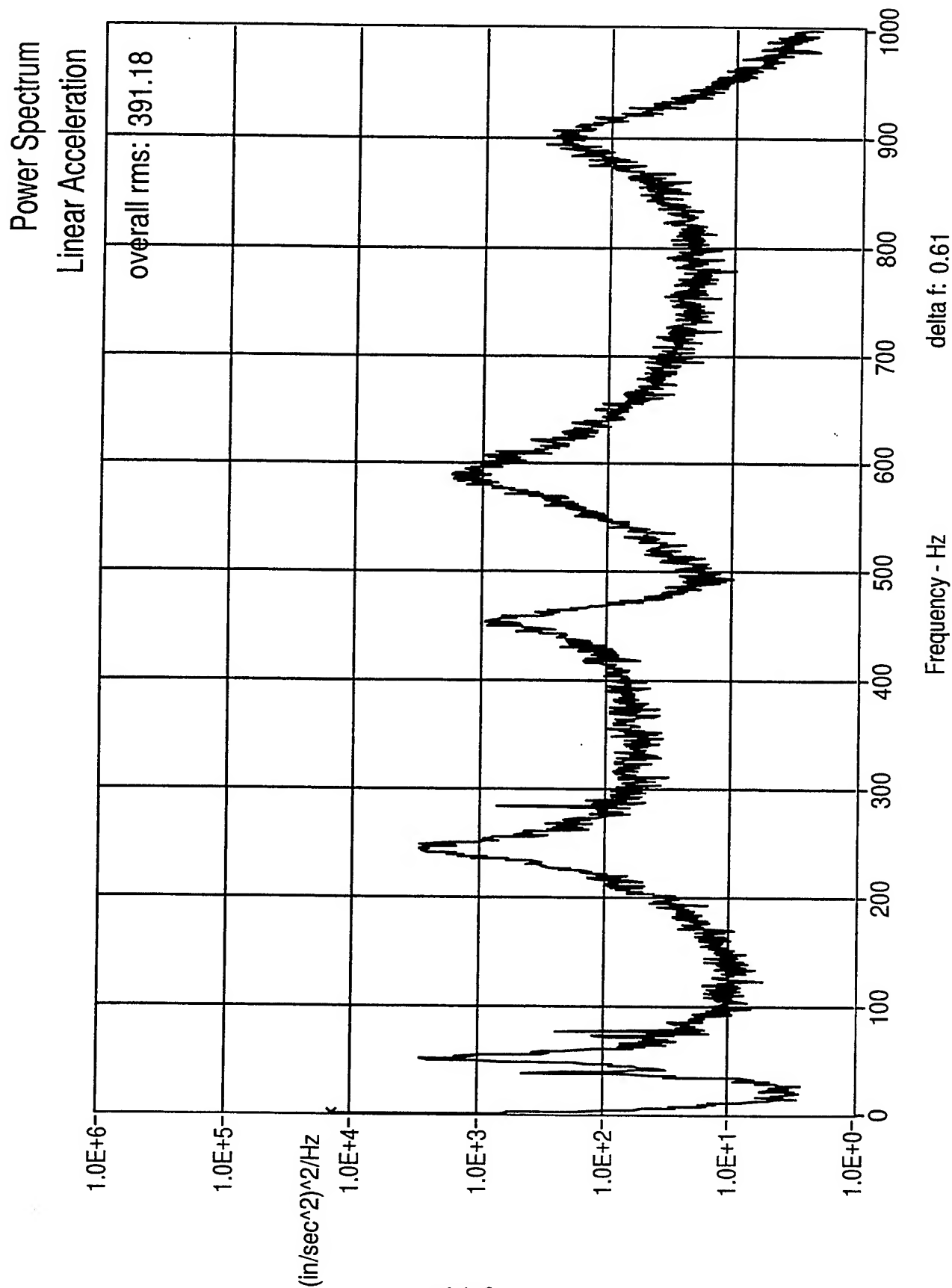


F-15 TPN\_3307: q=30 alpha=32 beta=0 bp=45

Power Spectrum  
Linear Acceleration



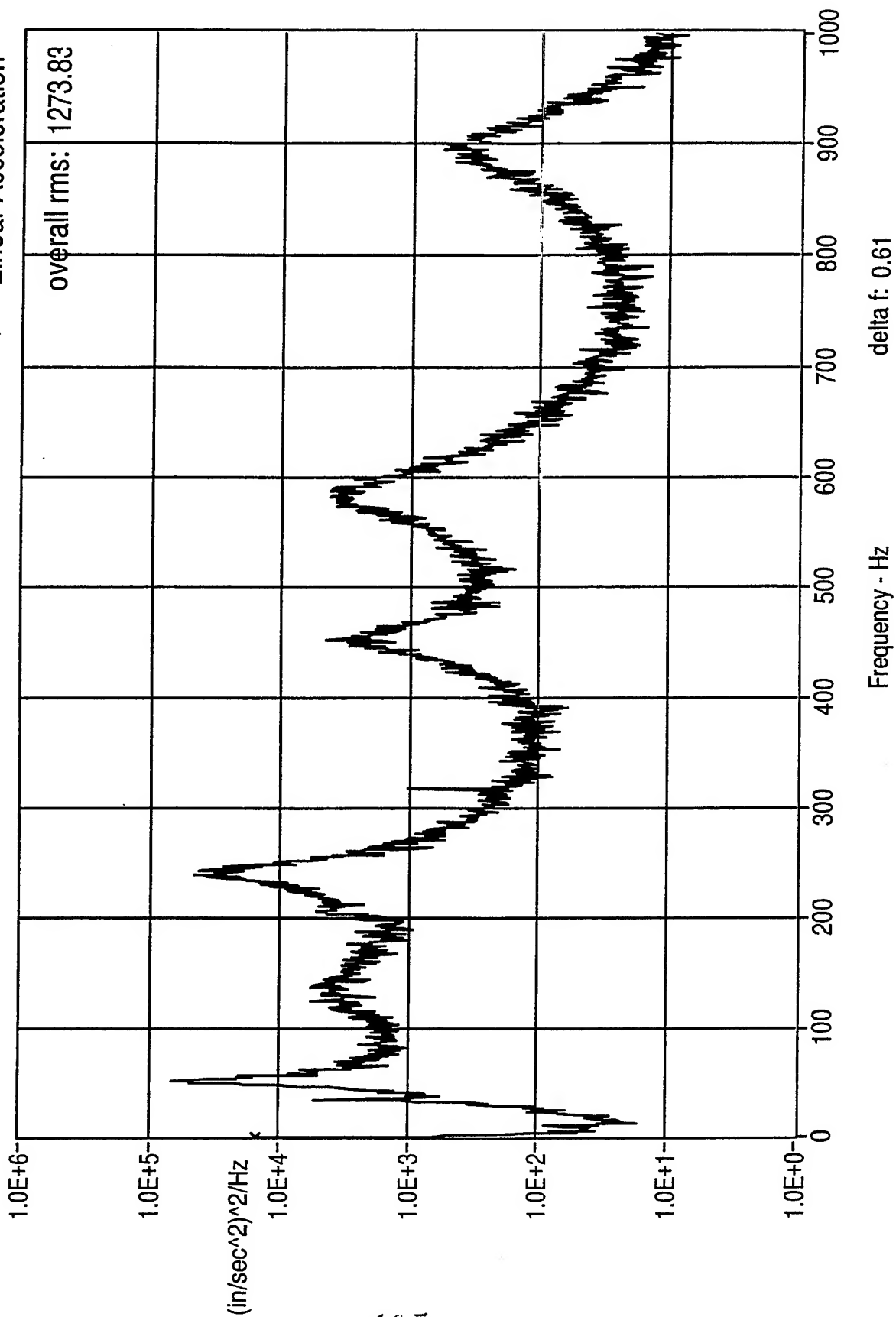
F-15 TPN\_3315: q=30 alpha=8 beta=4 bp=45



F-15 TPN\_3321: q=30 alpha=20 beta=4 bp=45

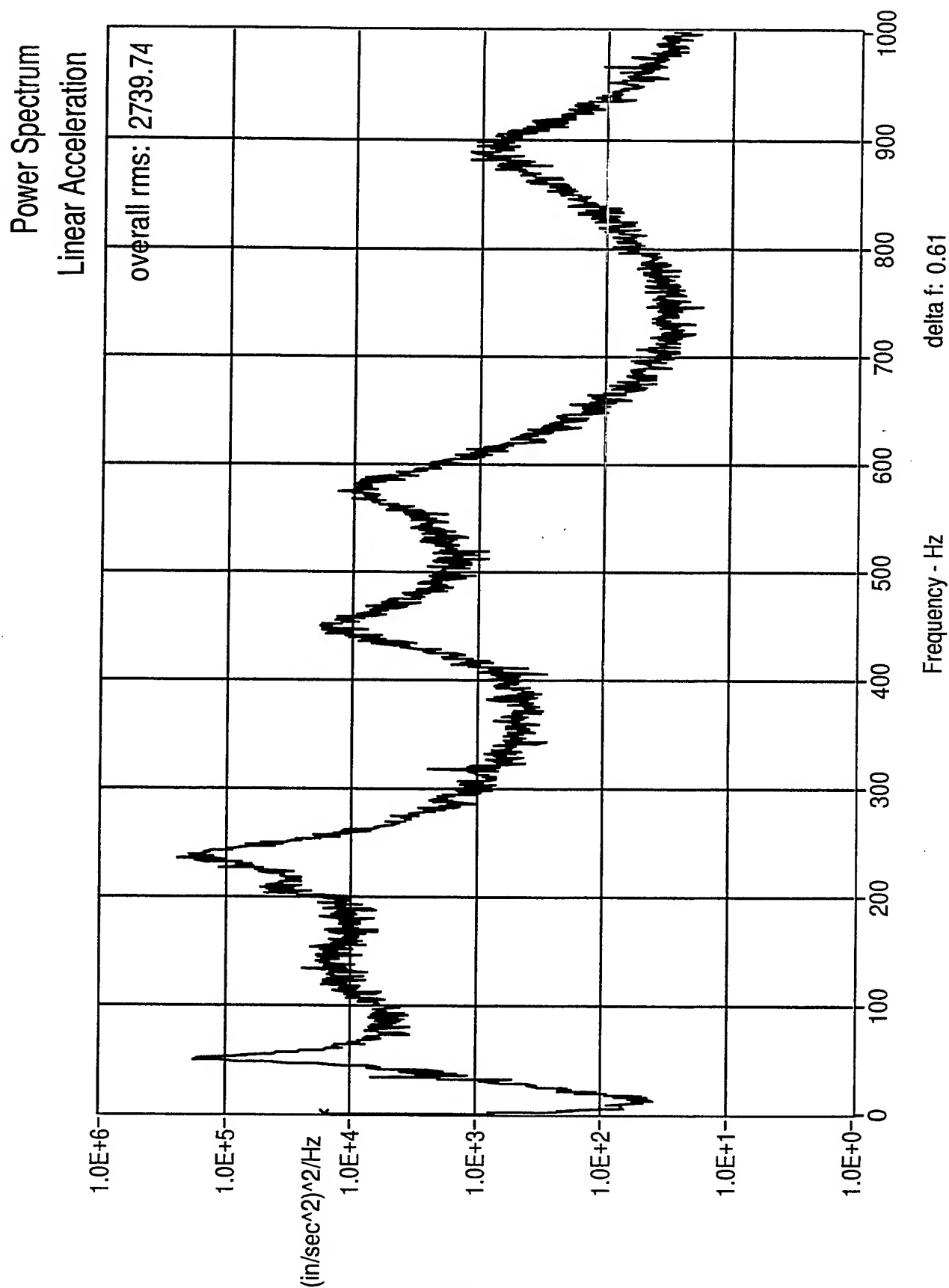
Power Spectrum

Linear Acceleration



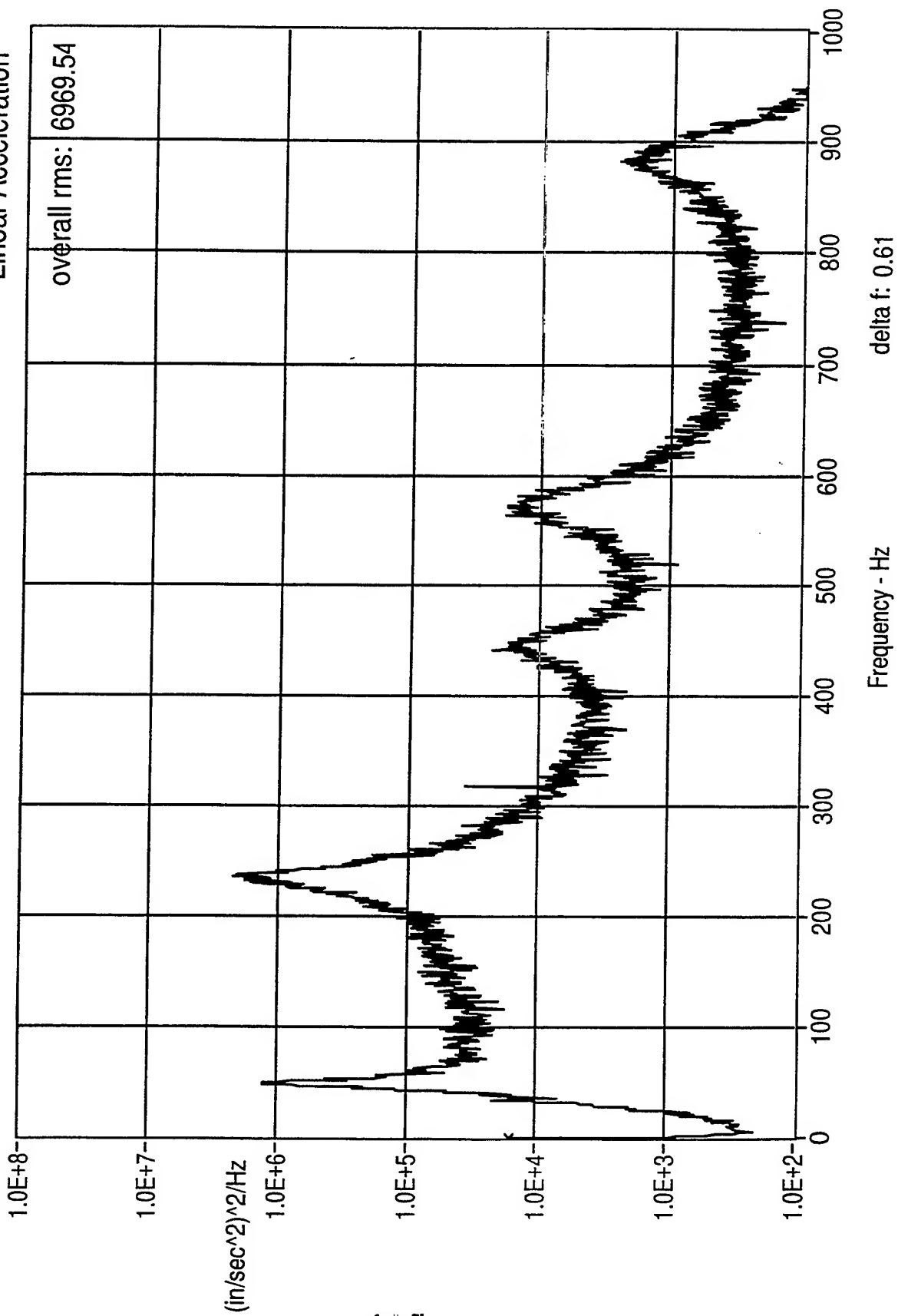


F-15 TPN\_3323: q=30 alpha=24 beta=4 bp=45

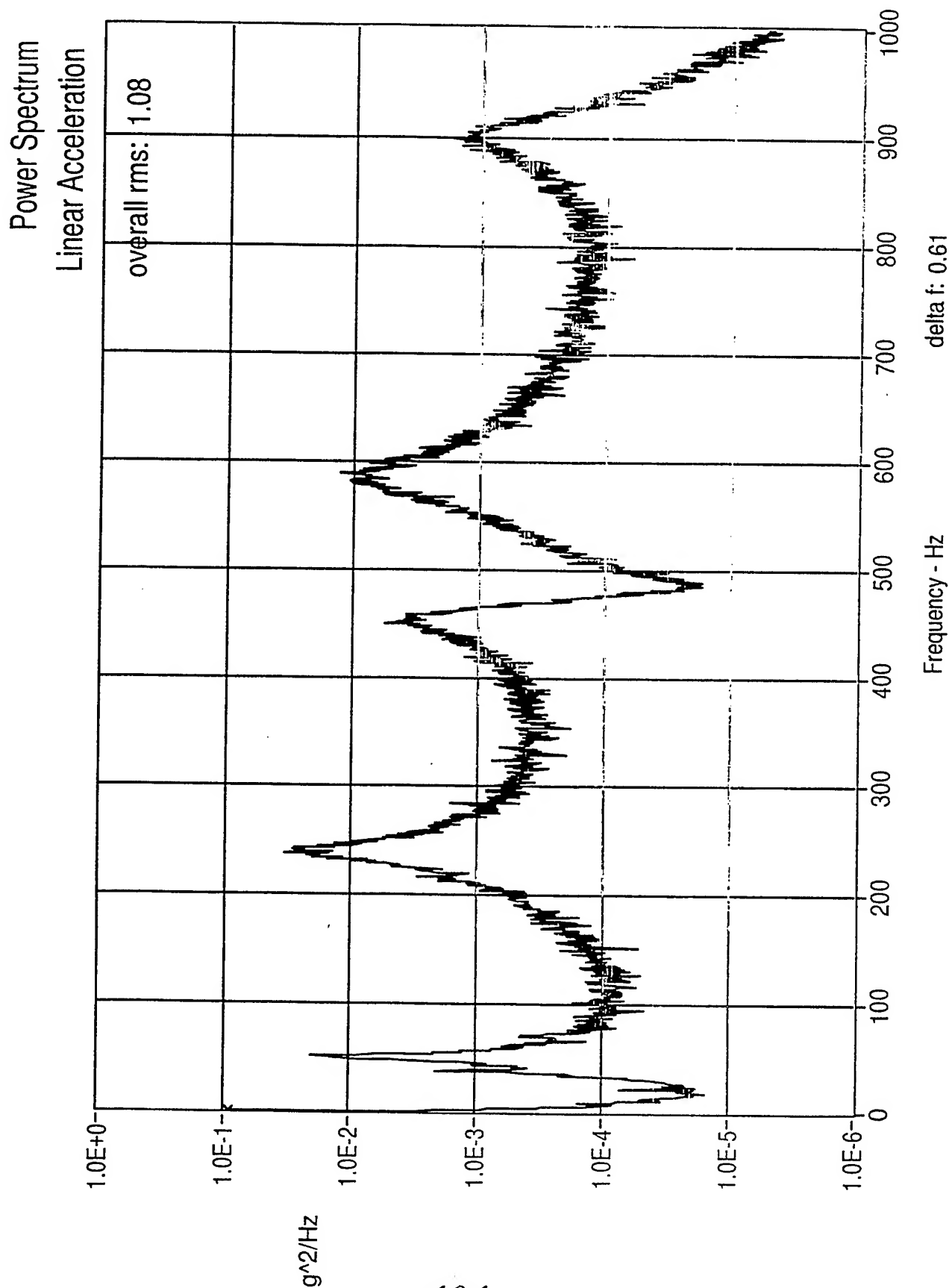


F-15 TPN\_3325: q=30 alpha=32 beta=4 bp=45

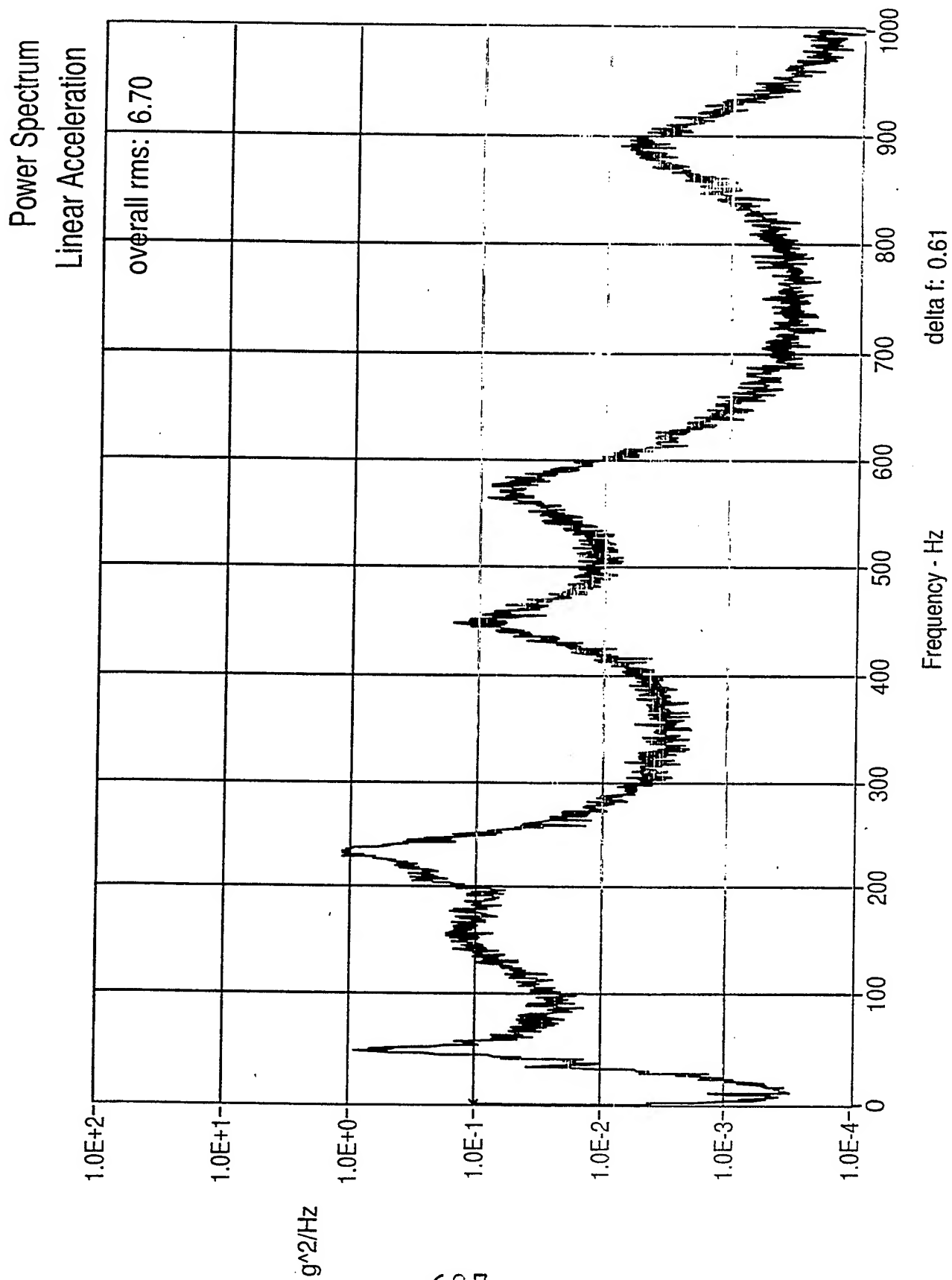
Power Spectrum  
Linear Acceleration



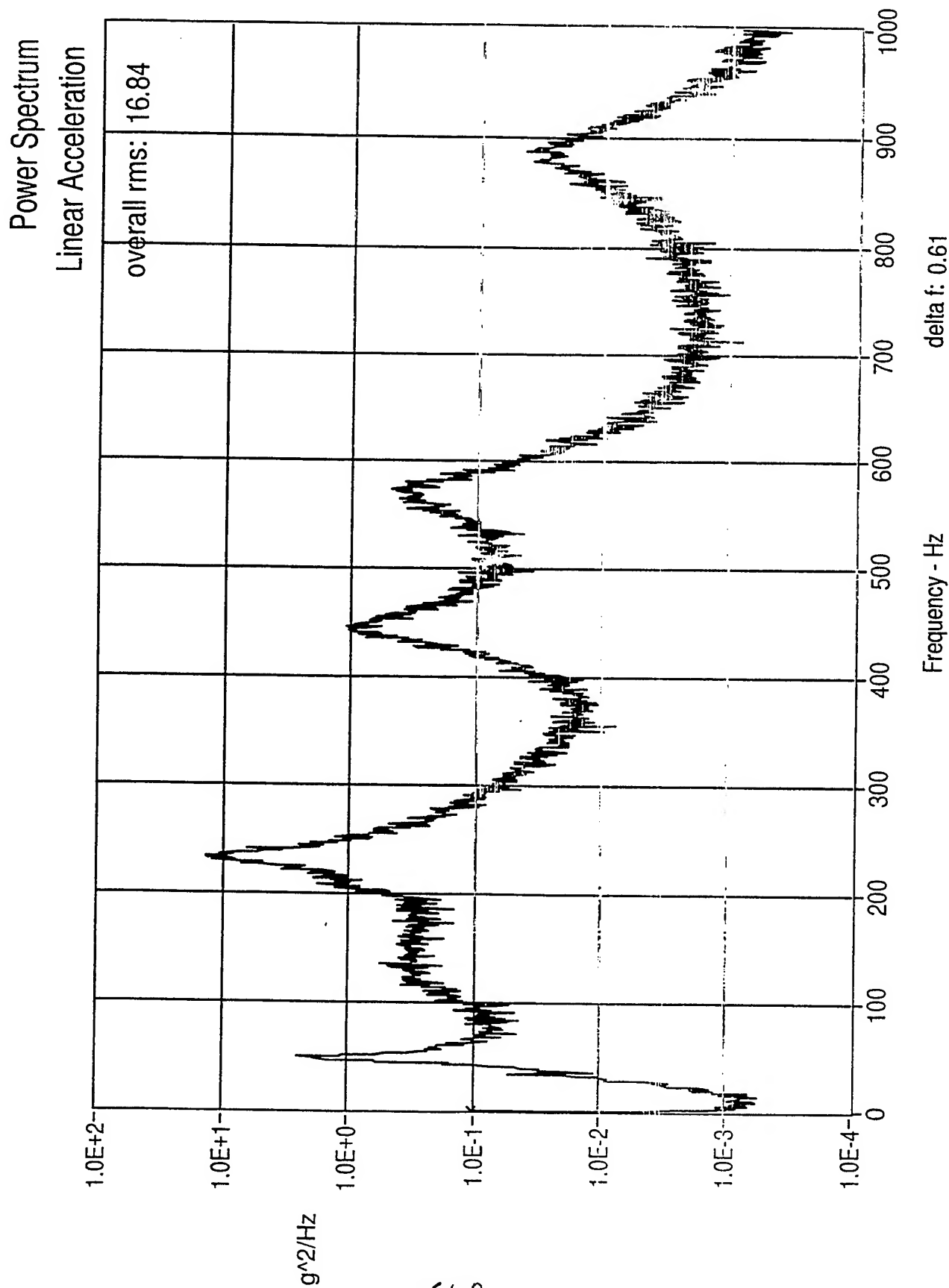
F-15 TPN\_3243: q=30 alpha=8 beta=0 bp=0



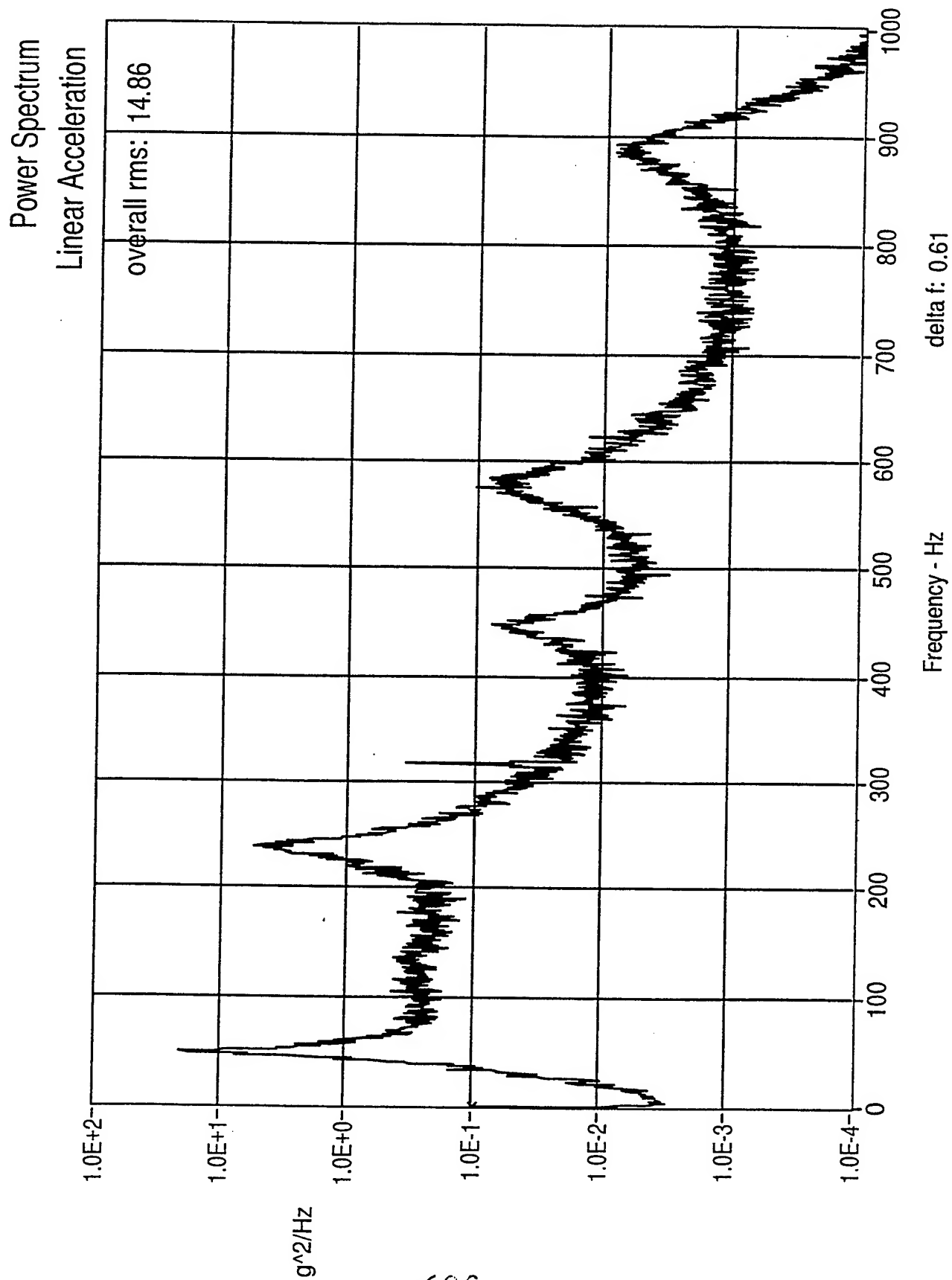
F-15 TPN\_3249: q=30 alpha=20 beta=0 bp=0



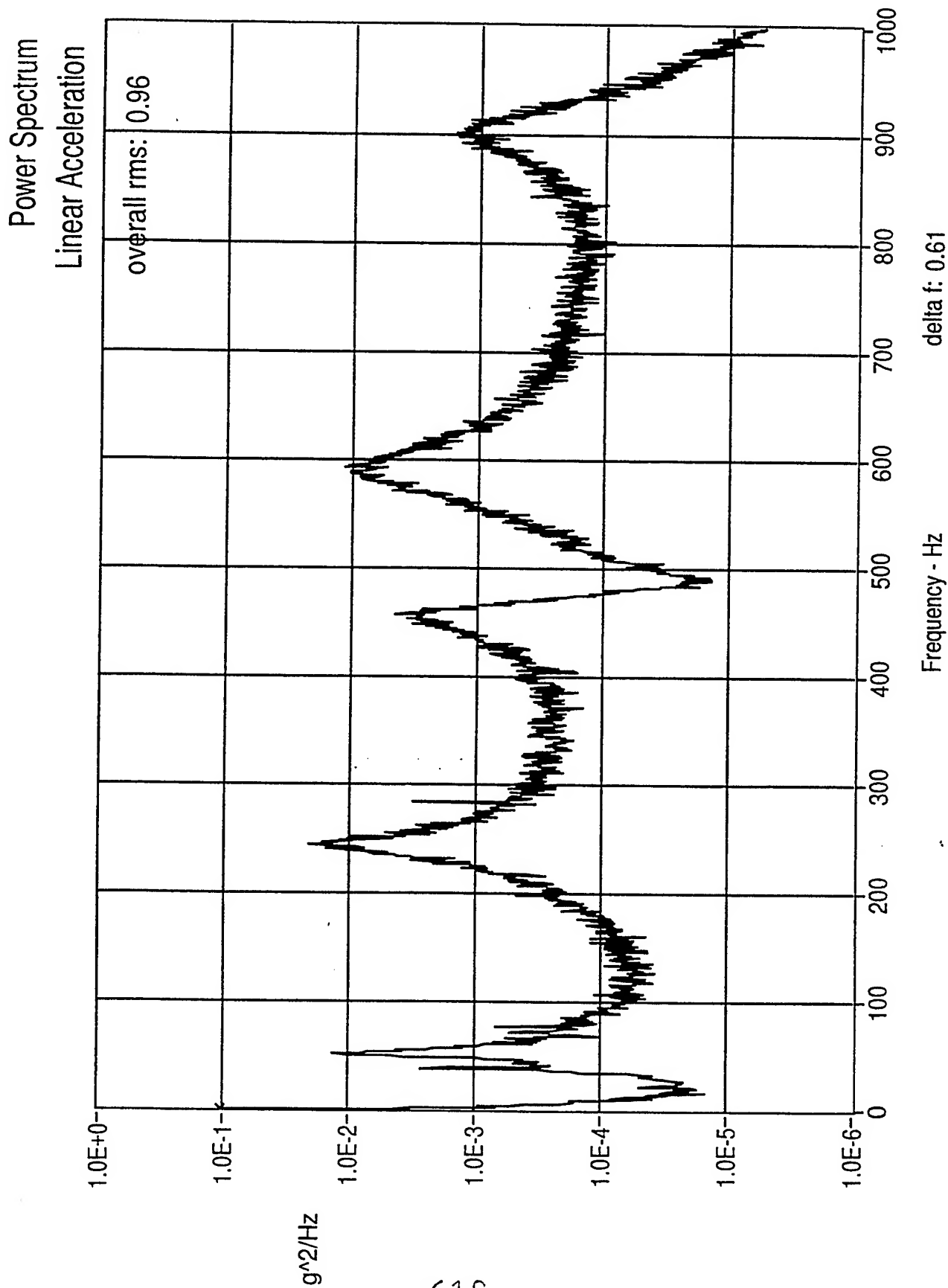
F-15 TPN\_3251: q=30 alpha=24 beta=0 bp=0



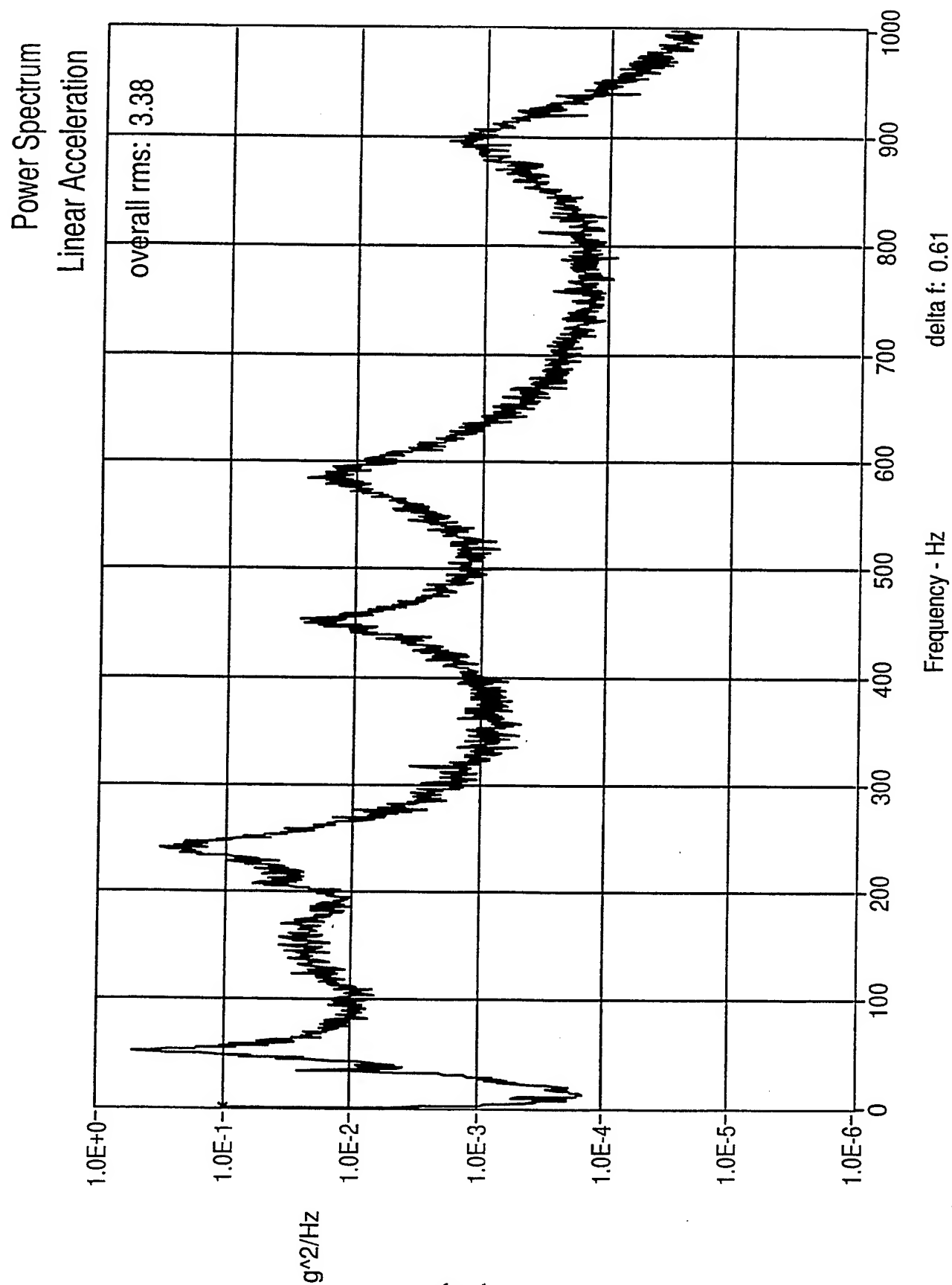
F-15 TPN\_3253: q=30 alpha=32 beta=0 bp=0



F-15 TPN\_3261: q=30 alpha=8 beta=4 bp=0

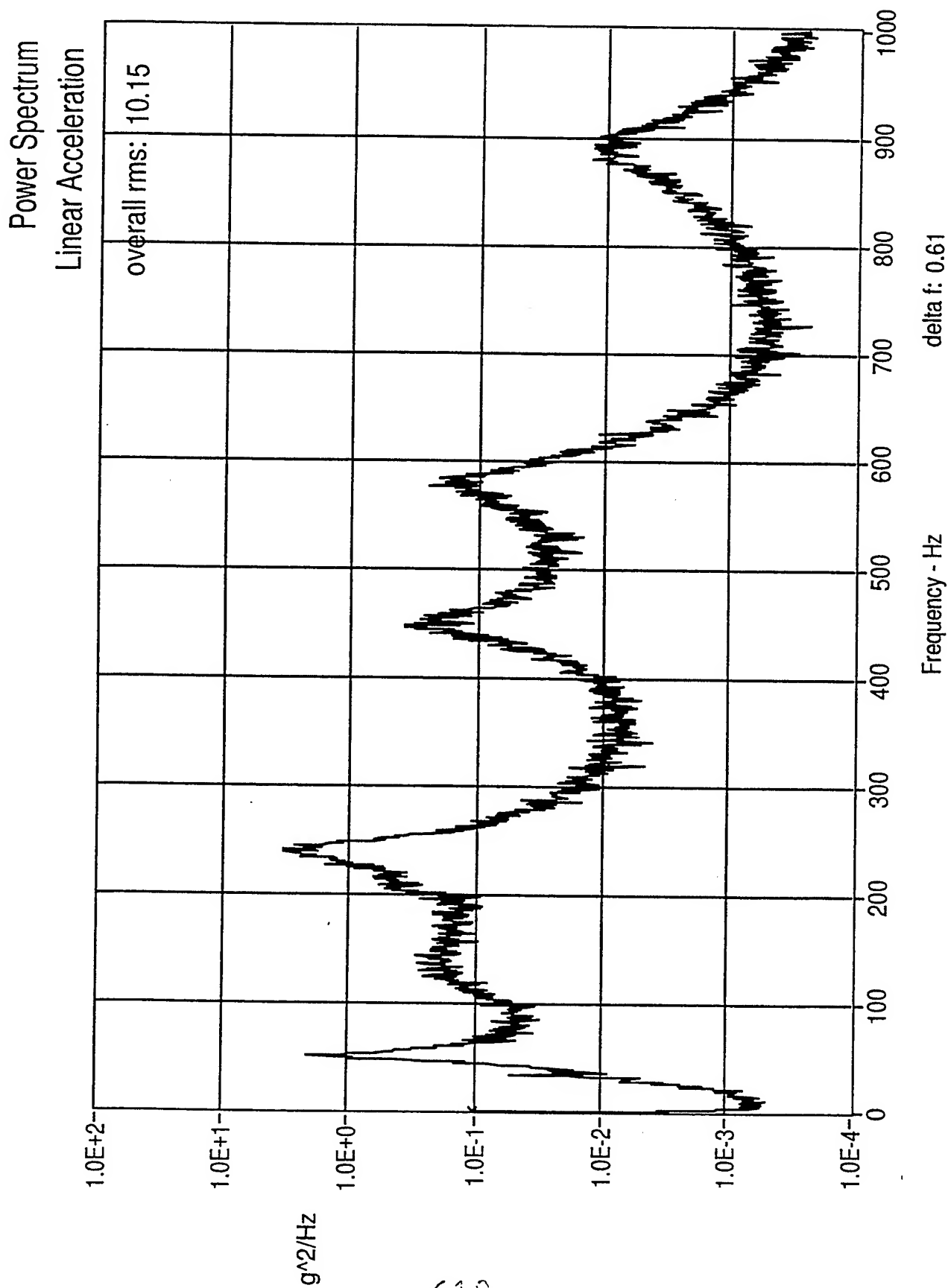


F-15 TPN\_3267: q=30 alpha=20 beta=4 bp=0

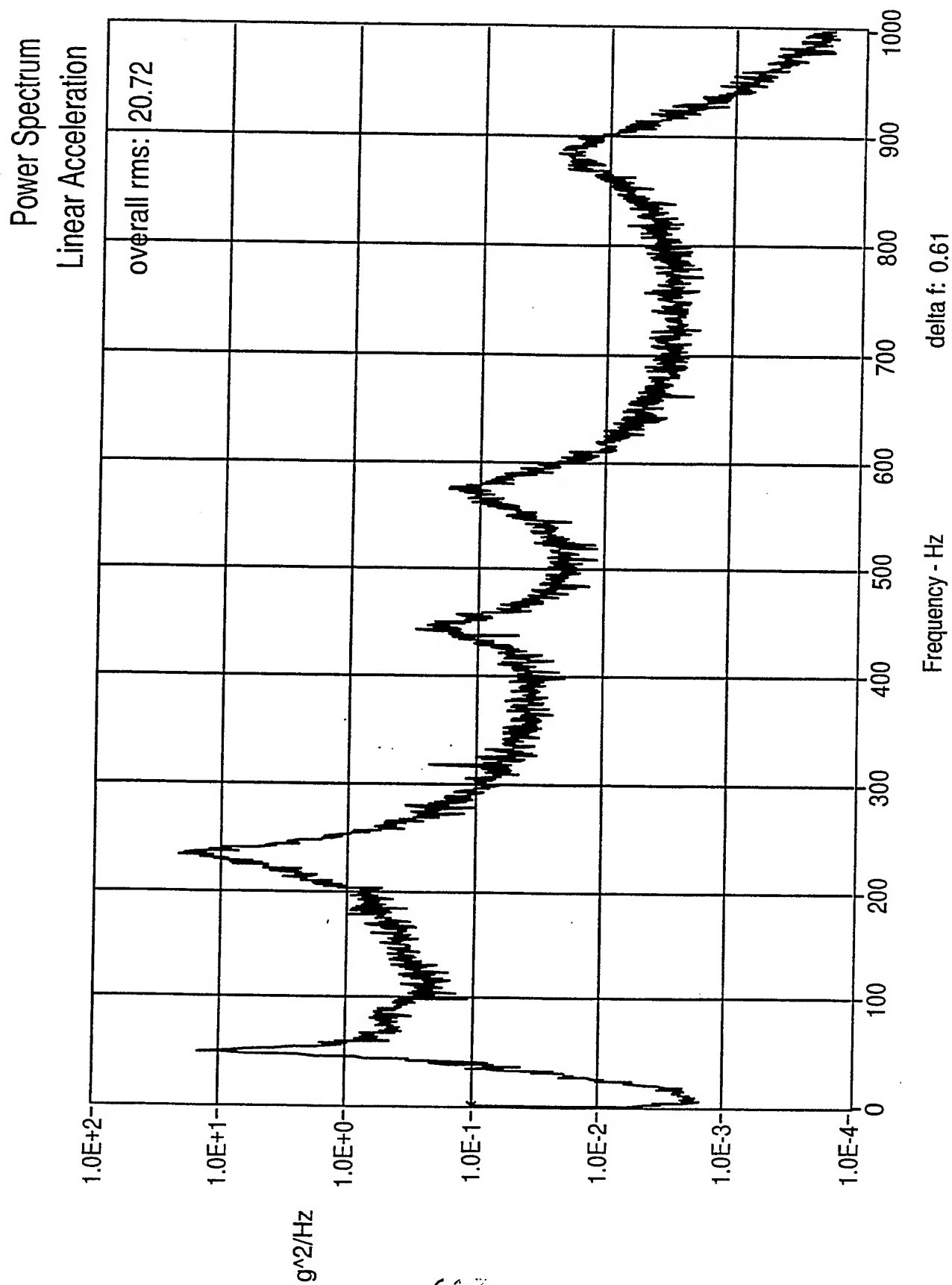




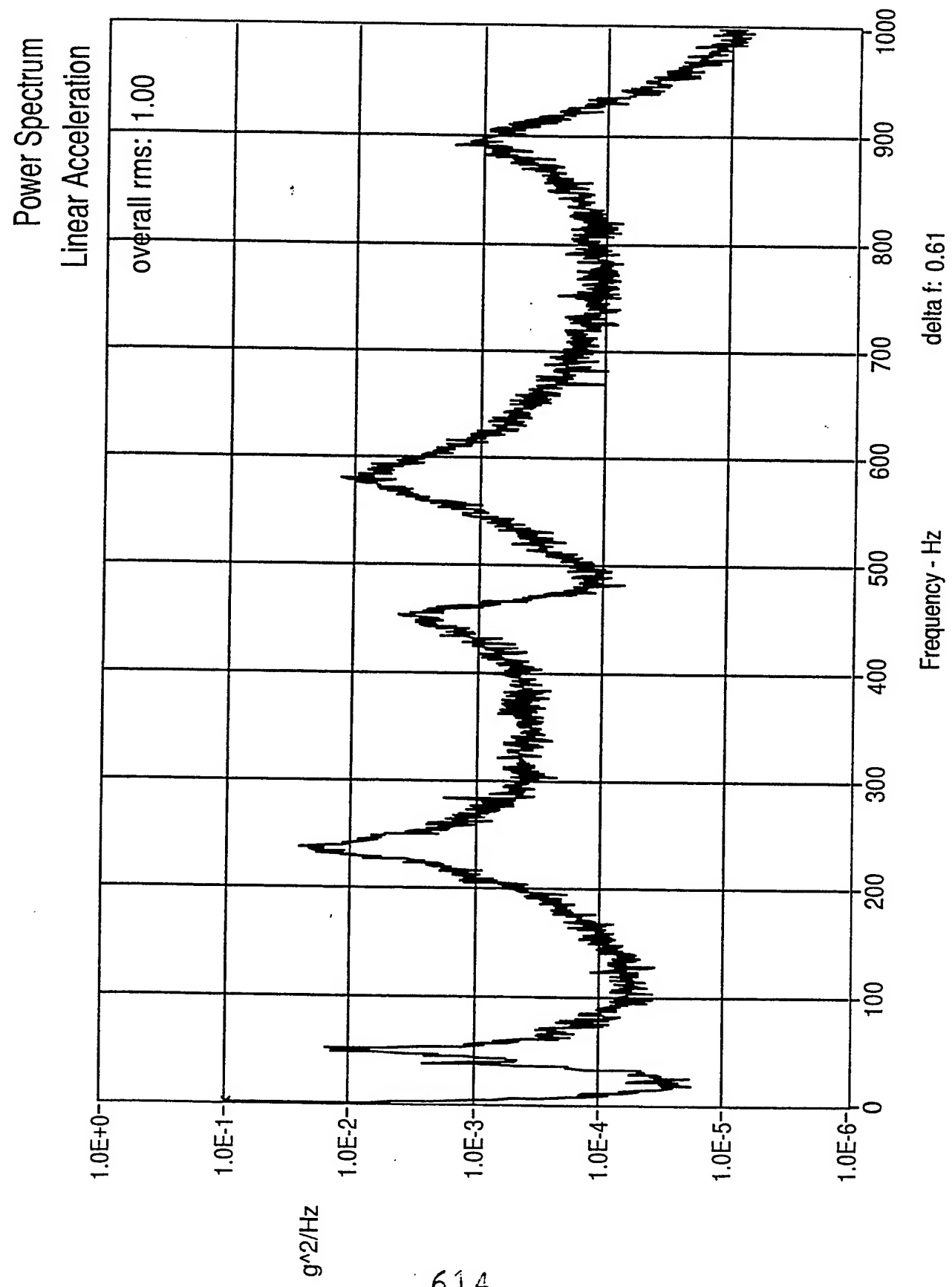
F-15 TPN\_3269: q=30 alpha=24 beta=4 bp=0



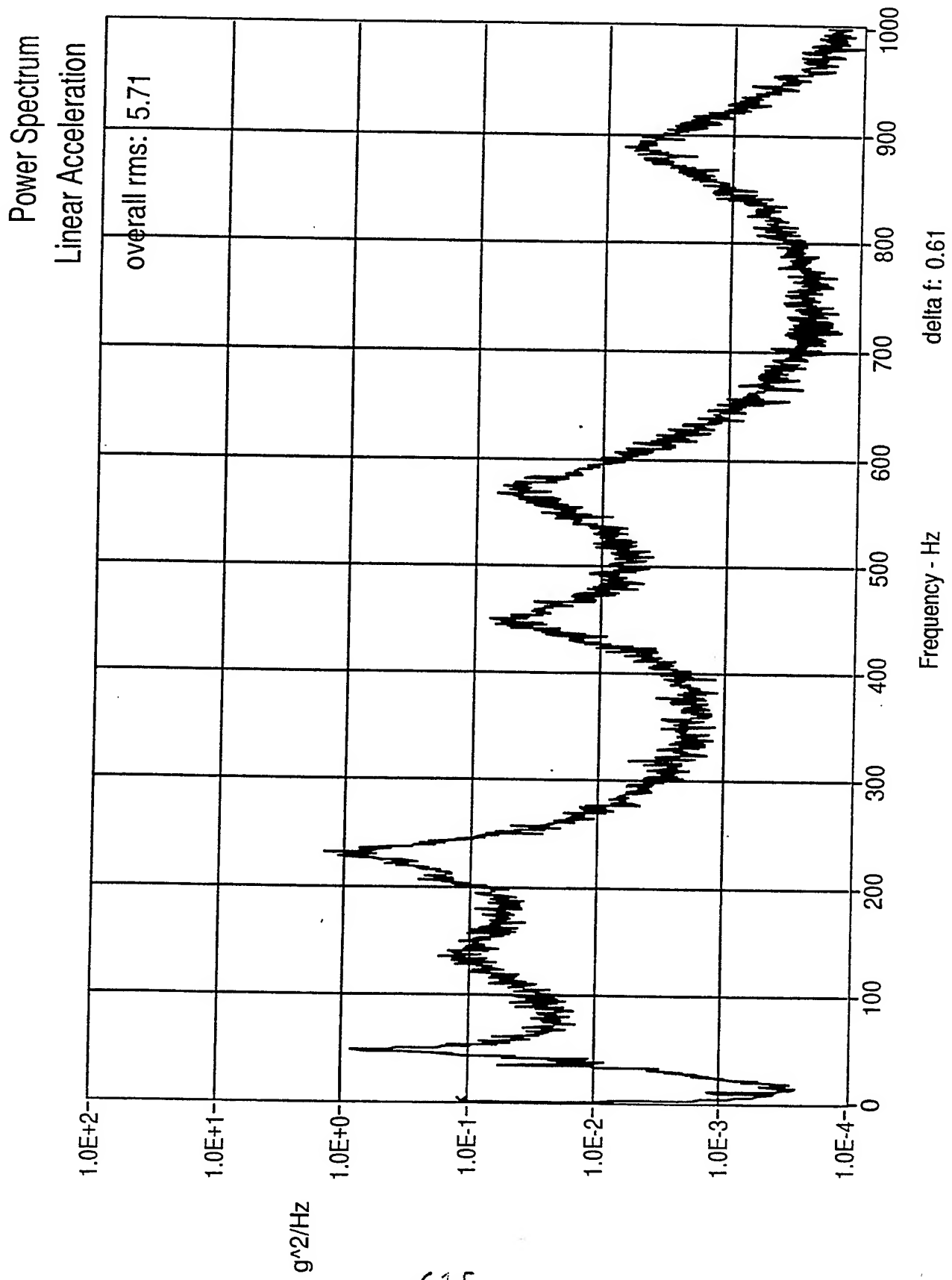
F-15 TPN\_3271: q=30 alpha=32 beta=4 bp=0



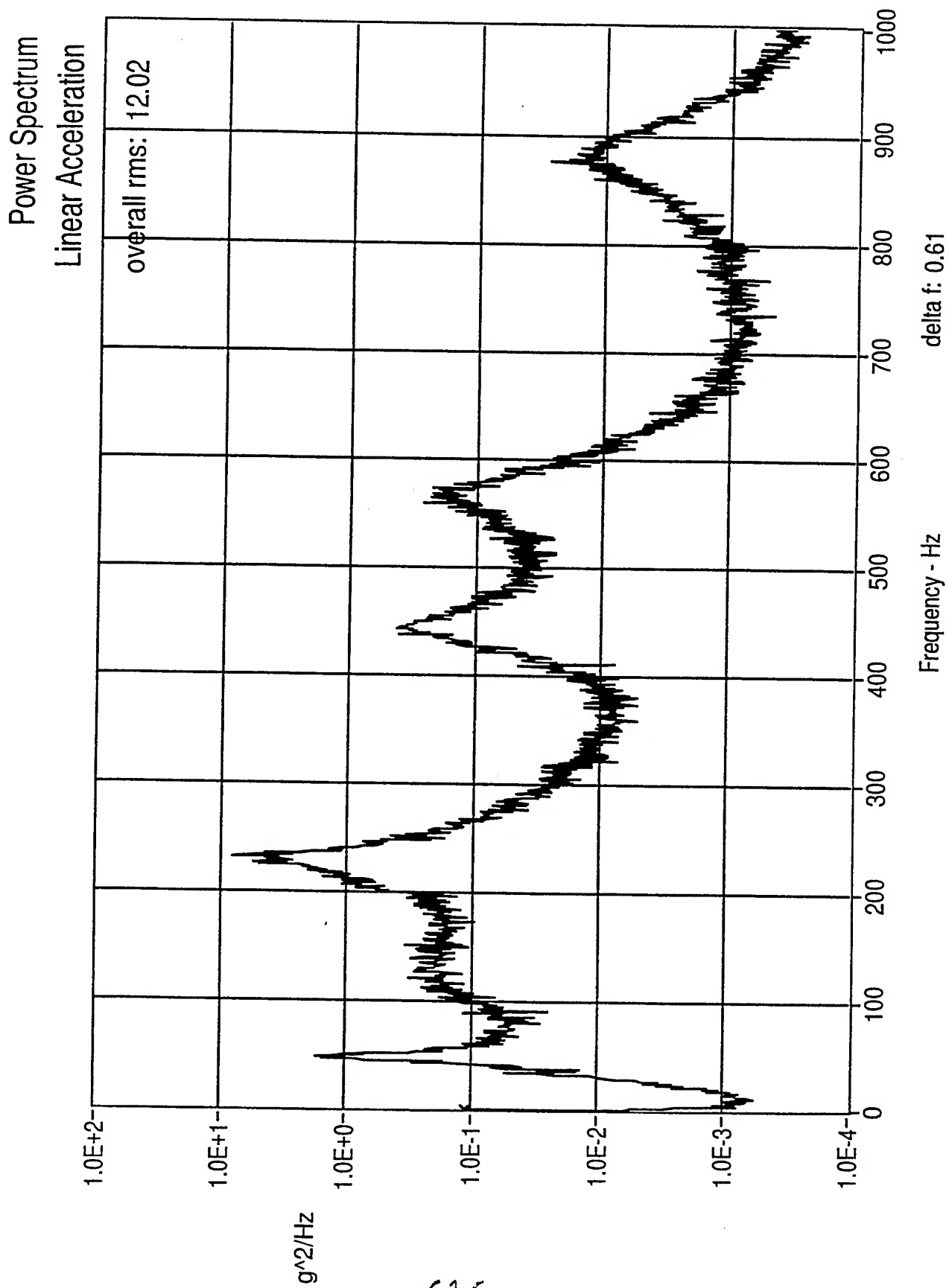
F-15 TPN\_3297: q=30 alpha=8 beta=0 bp=45



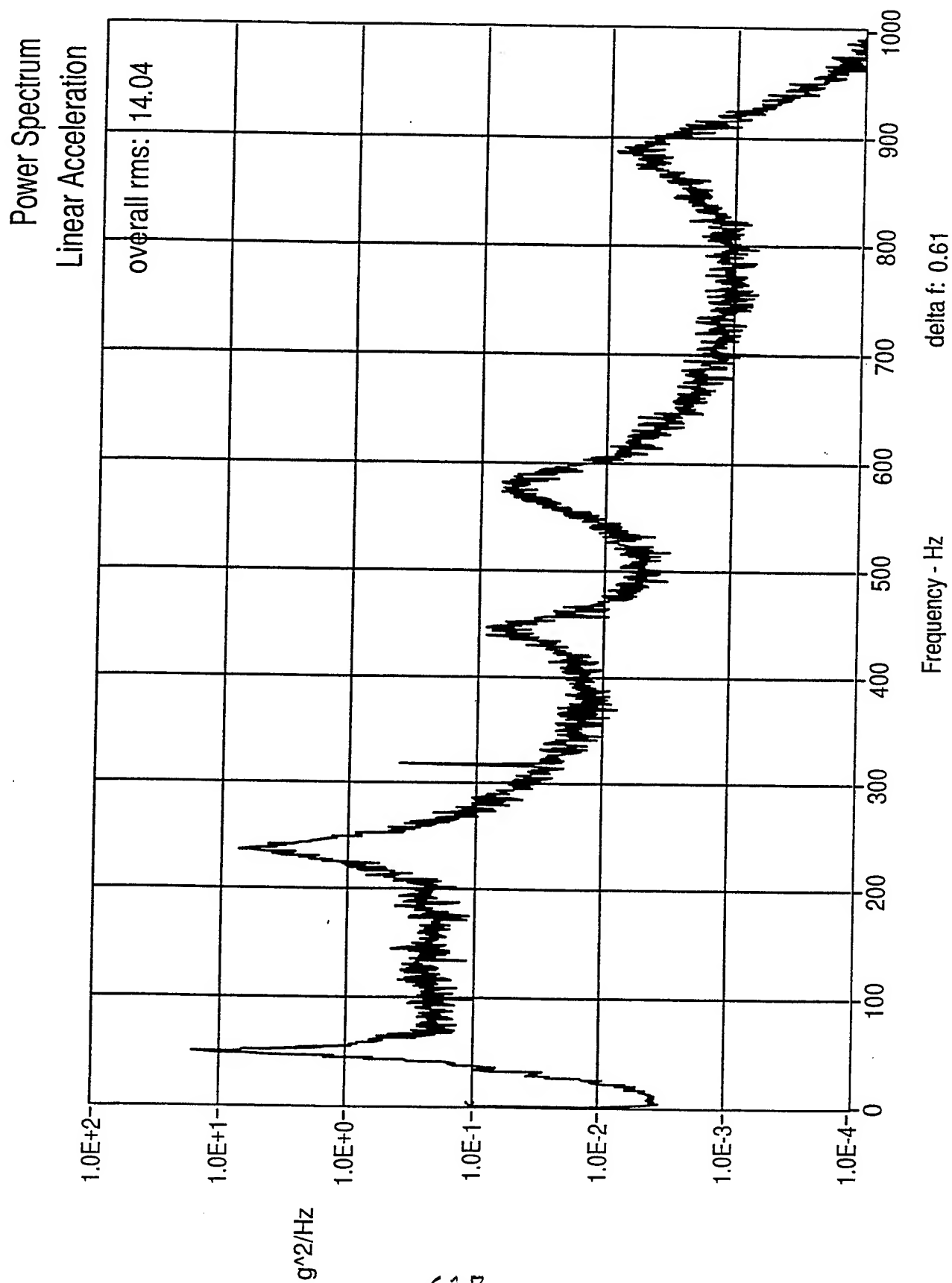
F-15 TPN\_3303: q=30 alpha=20 beta=0 bp=45



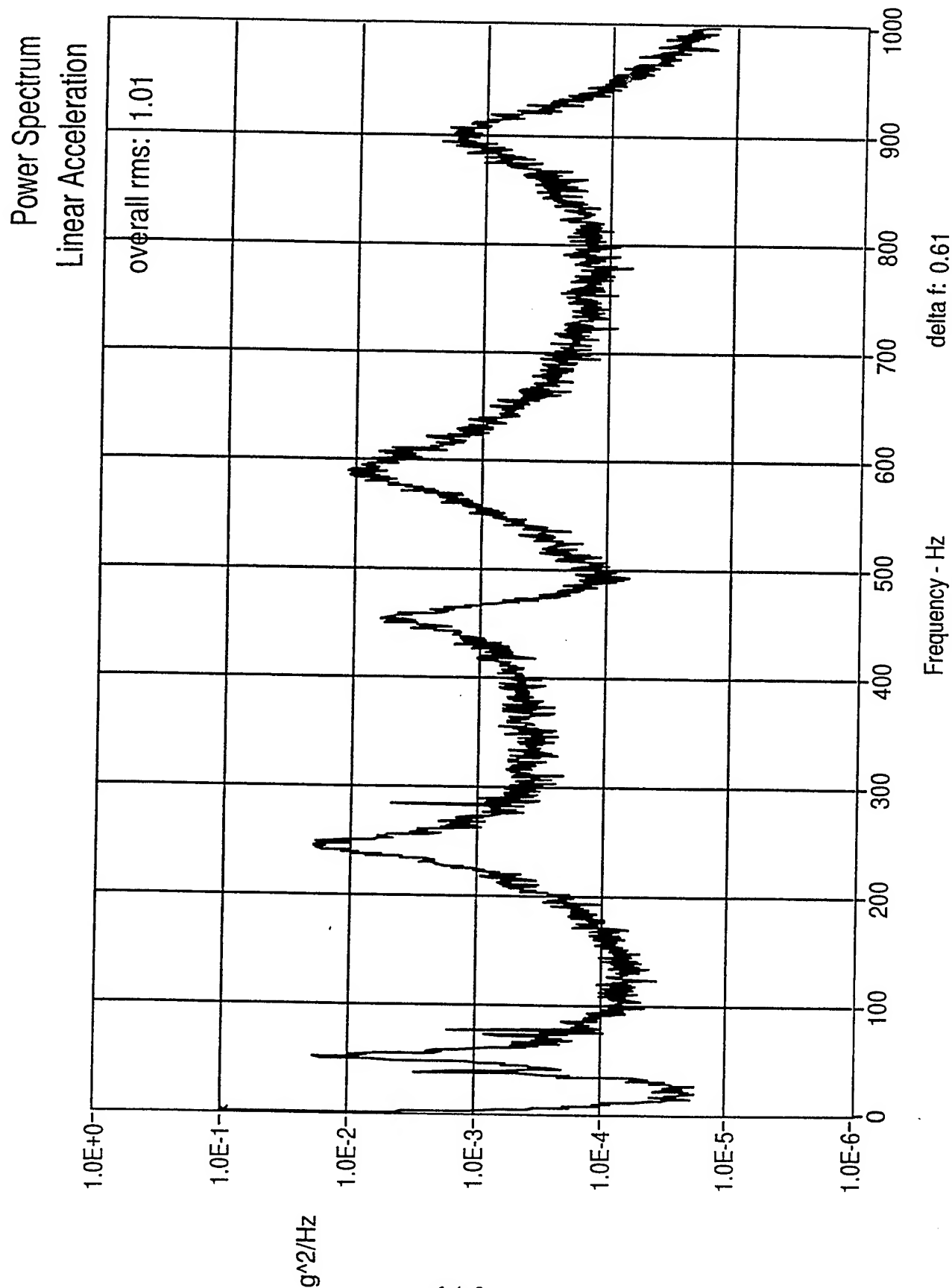
F-15 TPN\_3305: q=30 alpha=24 beta=0 bp=45



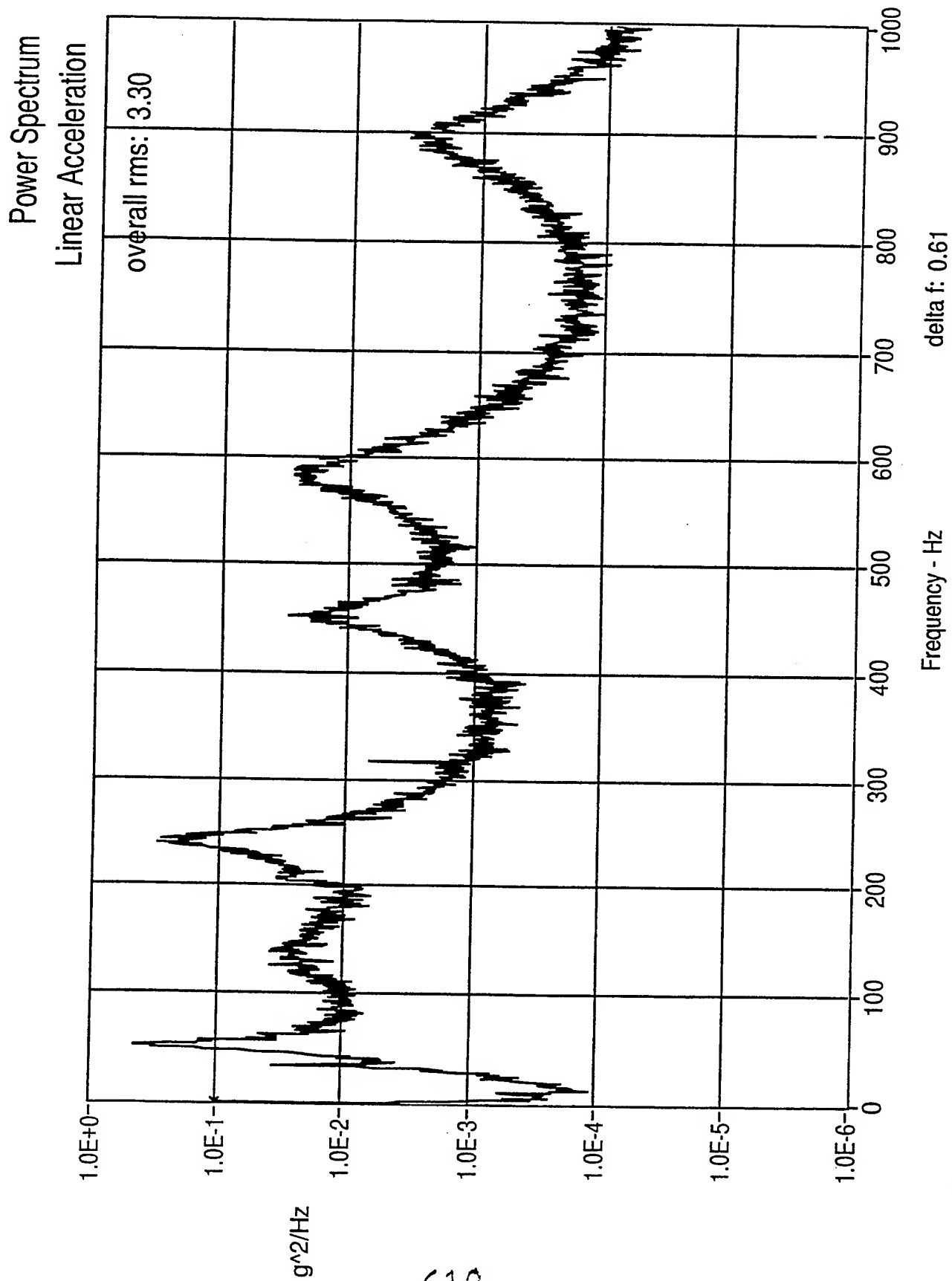
F-15 TPN\_3307: q=30 alpha=32 beta=0 bp=45



F-15 TPN\_3315: q=30 alpha=8 beta=4 bp=45

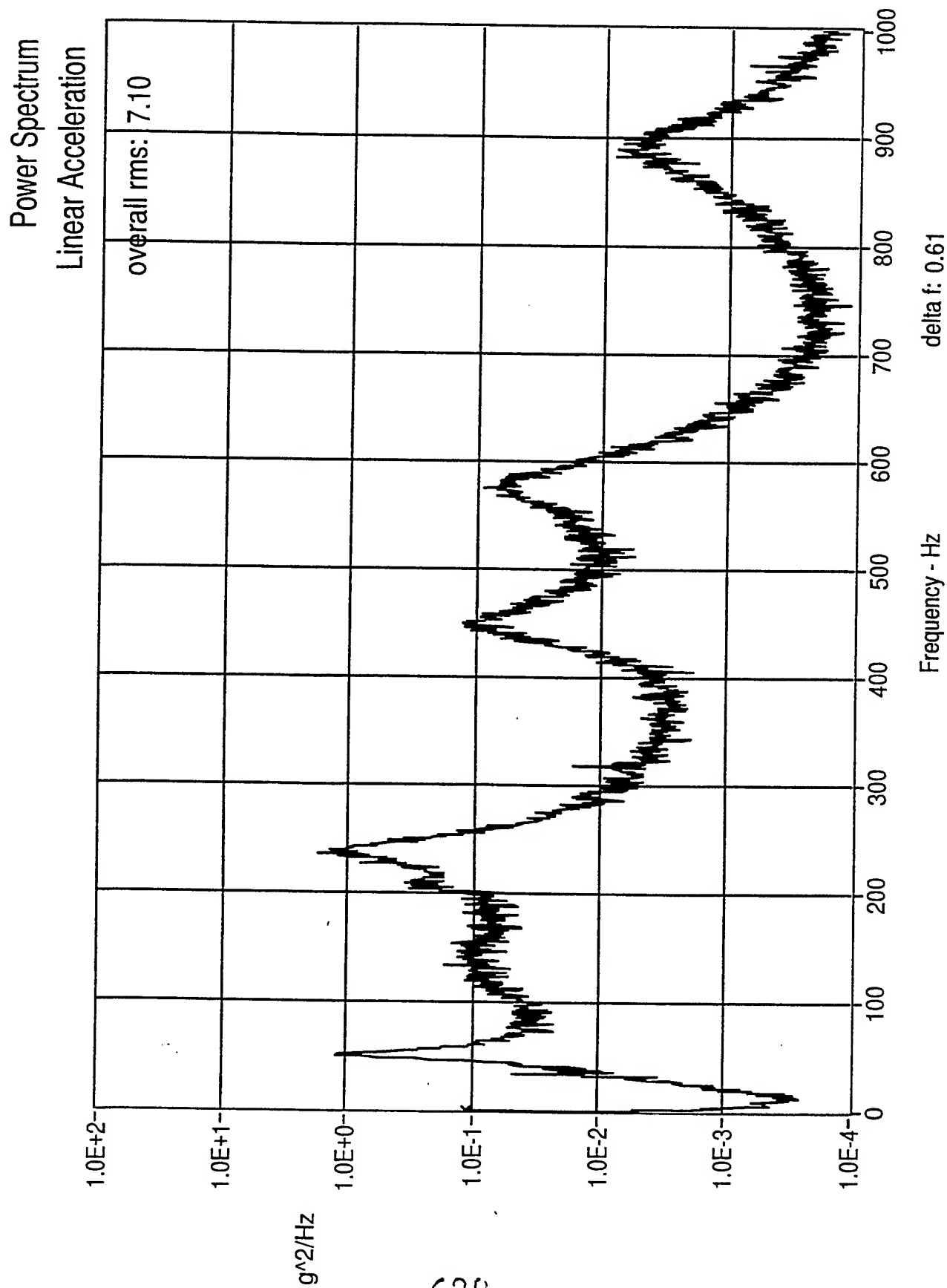


F-15 TPN\_3321: q=30 alpha=20 beta=4 bp=45

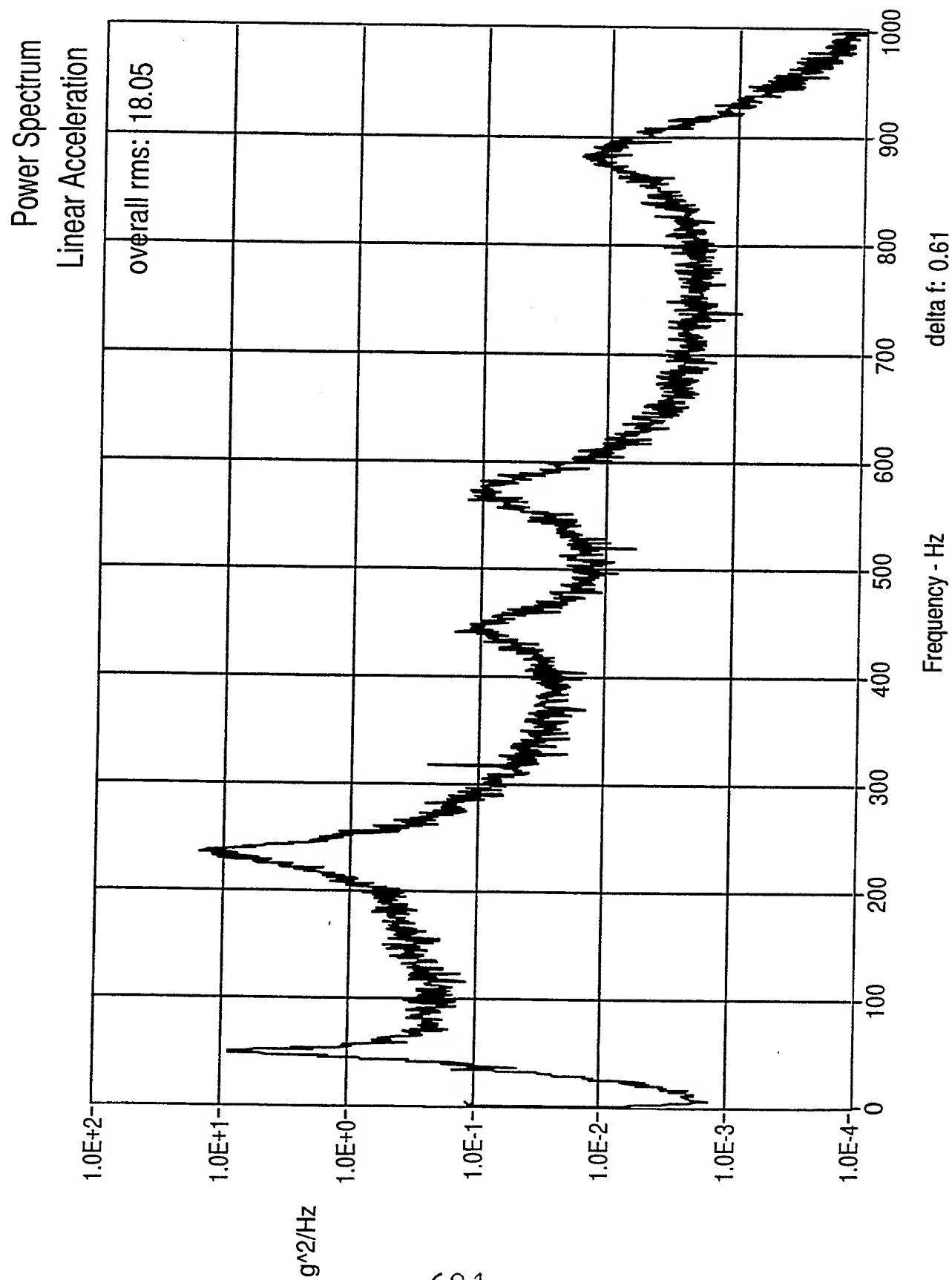




F-15 TPN\_3323: q=30 alpha=24 beta=4 bp=45



F-15 TPN\_3325: q=30 alpha=32 beta=4 bp=45



**FLEXIBLE TAIL RESPONSE  
ACCELERATION DATA**

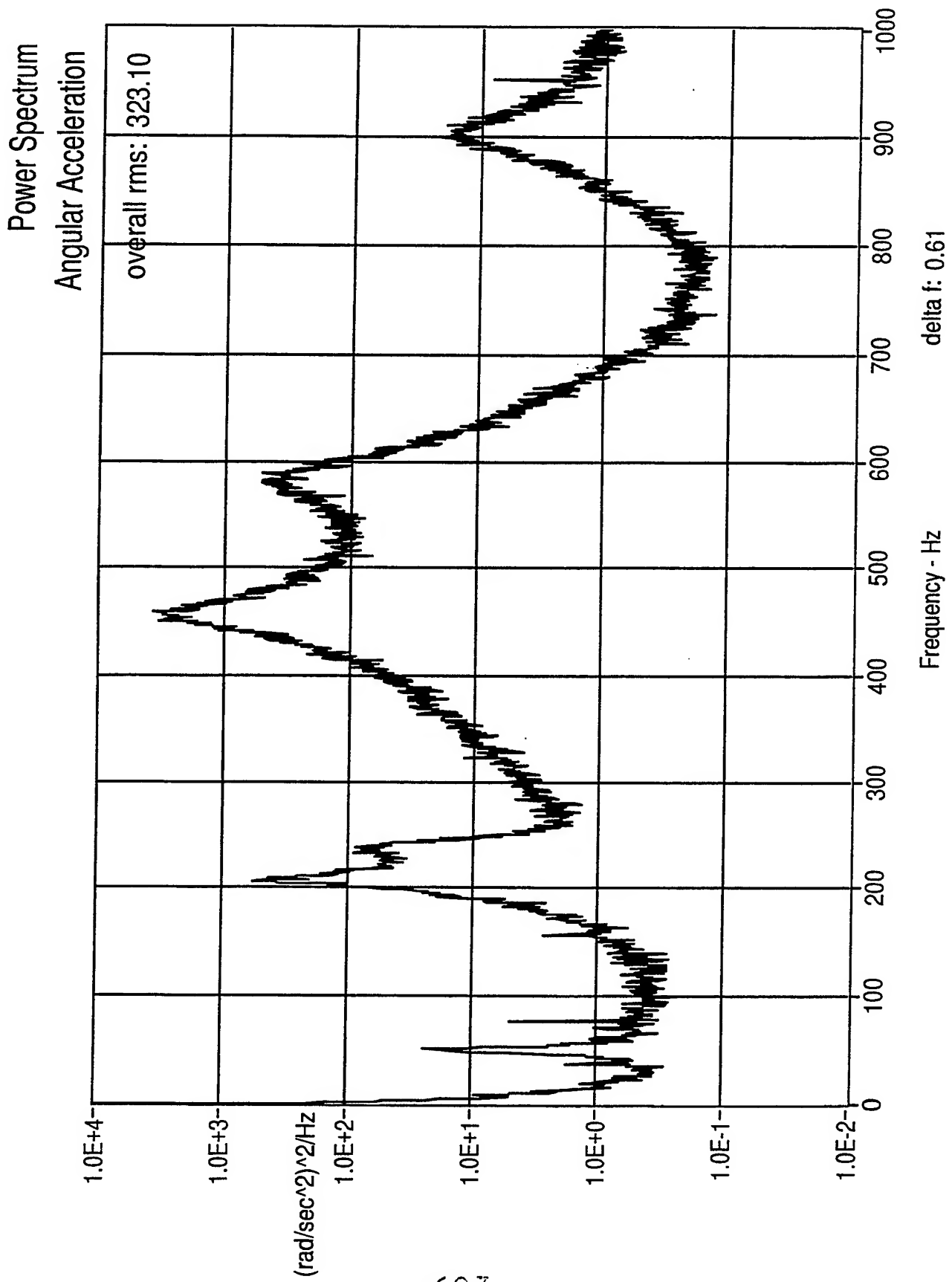
**Q= 30 PSF**

**PSD GRAPHS**

**4.1.2.3 TORSIONAL (ANGULAR AT EA) beta= 0, +4, -4 Deg, WBP = 0, 45, psi  
ALPHAS = 8, 20, 24, 32 DEG**

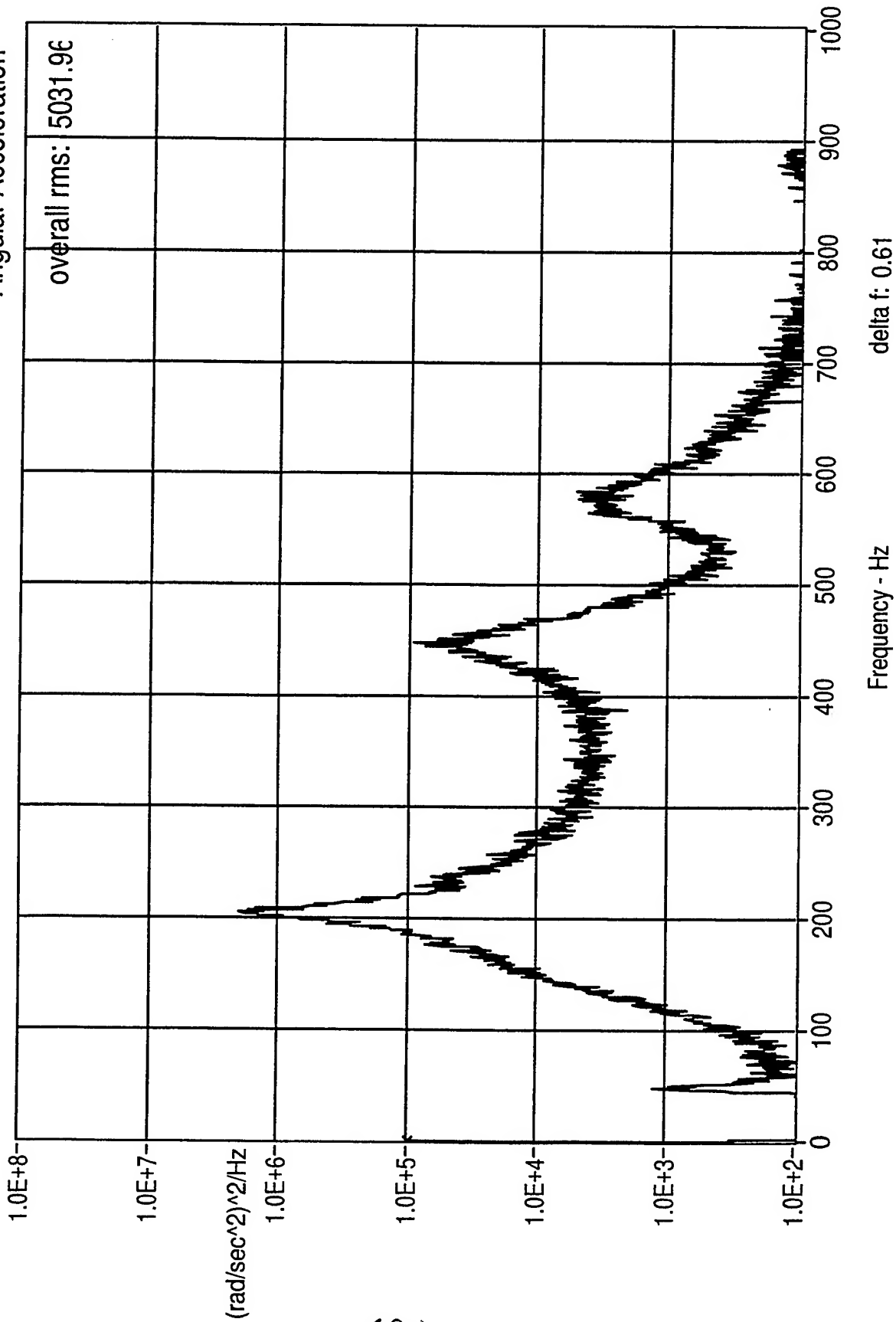
data is further blocked off by blowing pressures, with beta variation within.

F-15 TPN\_3243: q=30 alpha=δ beta=0 bp=0

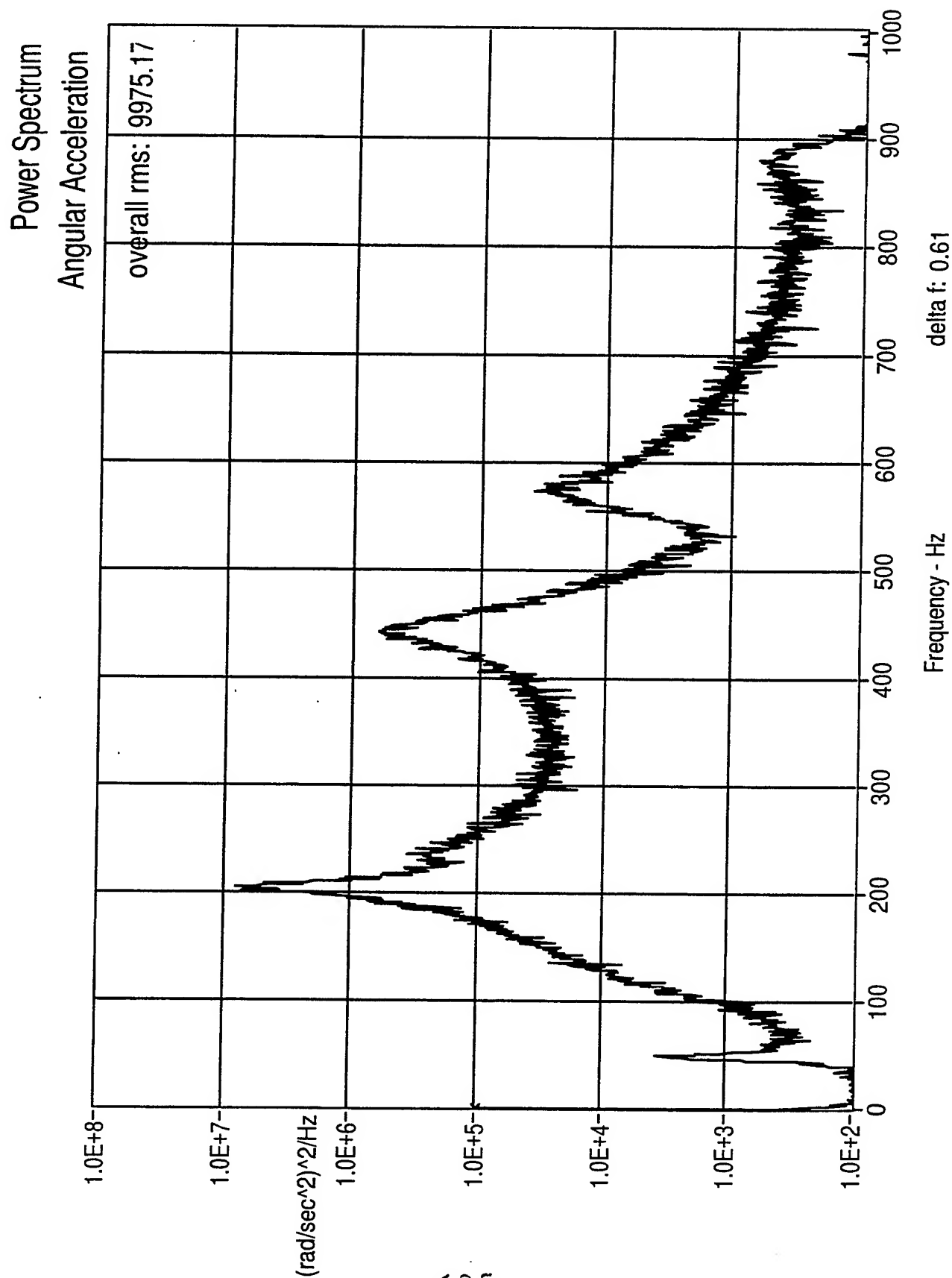


F-15 TPN\_3249: q=30 alpha=20 beta=0 bp=0

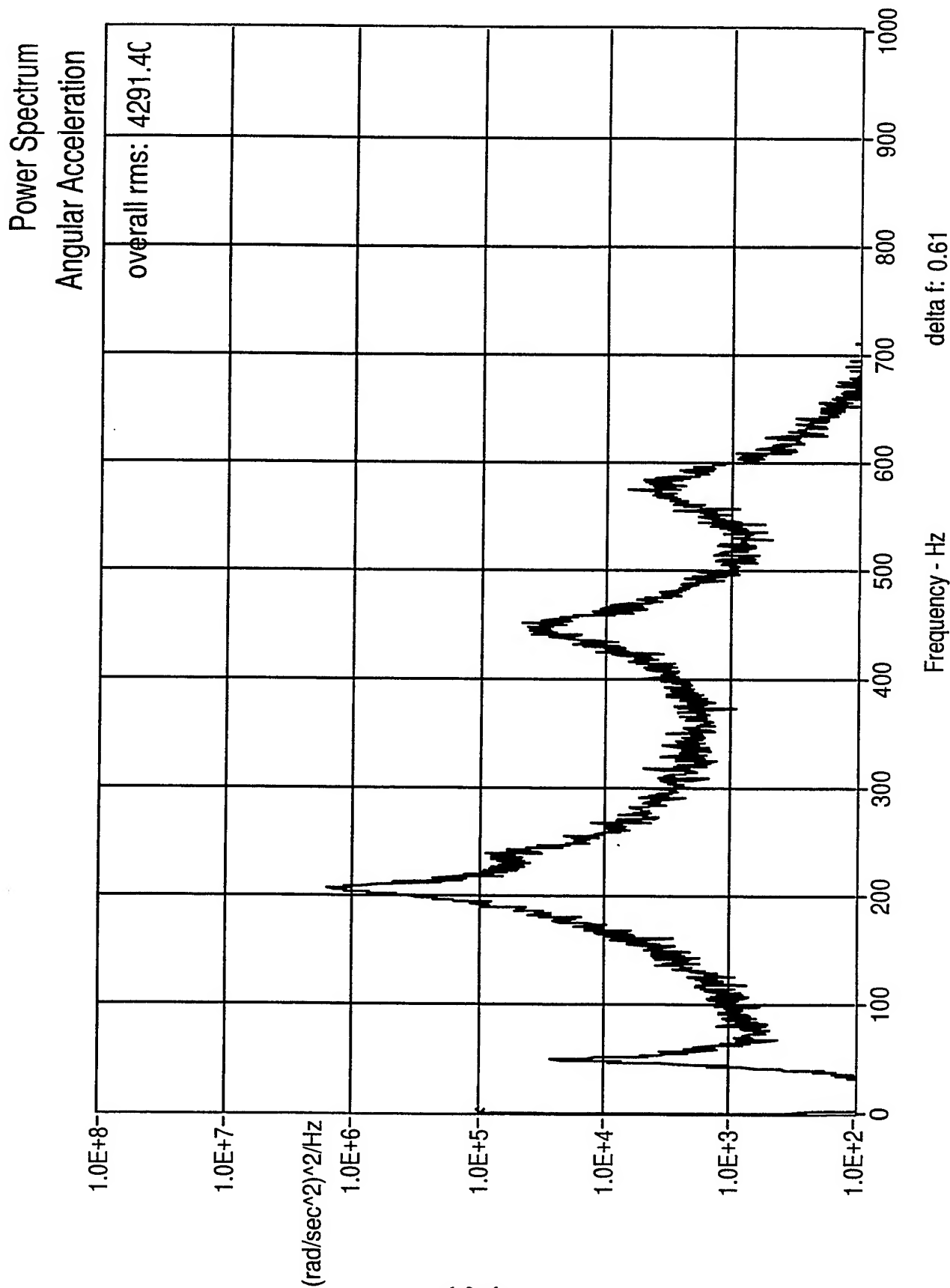
Power Spectrum  
Angular Acceleration



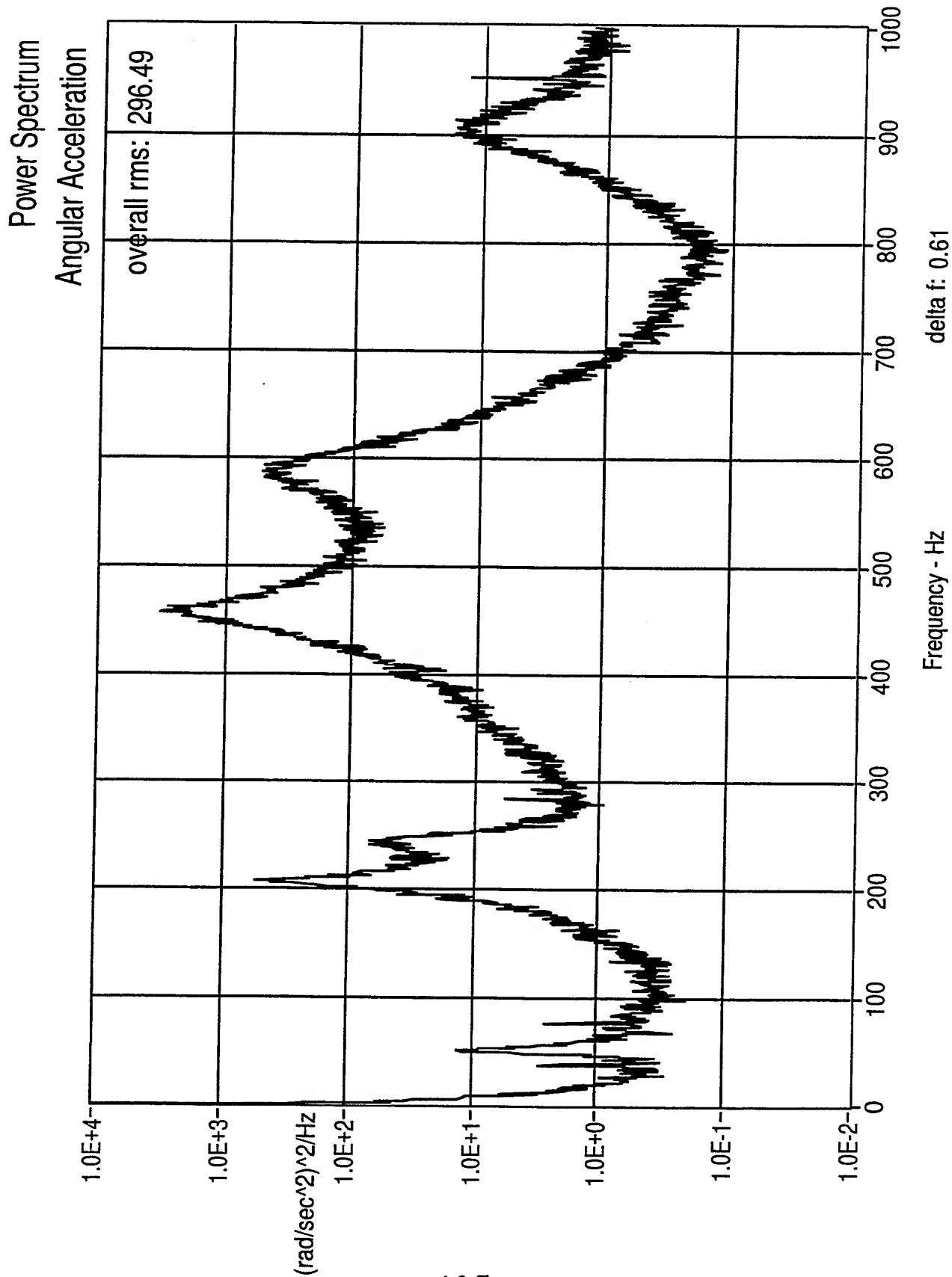
F-15 TPN\_3251: q=30 alpha=24 beta=0 bp=0



F-15 TPN\_3253: q=30 alpha=32 beta=0 bp=0

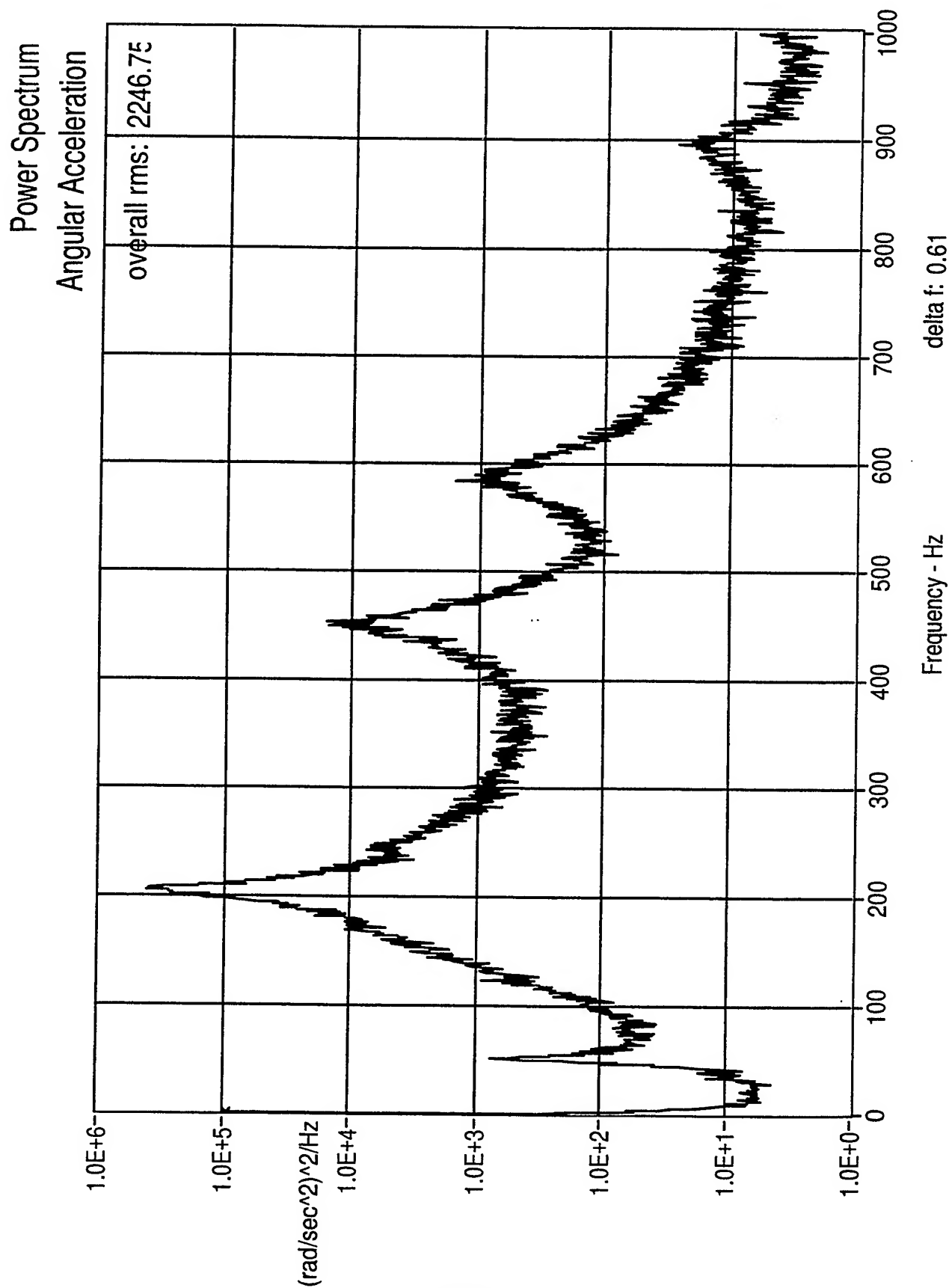


F-15 TPN\_3261: q=30 alpha=8 beta=4 bp=0





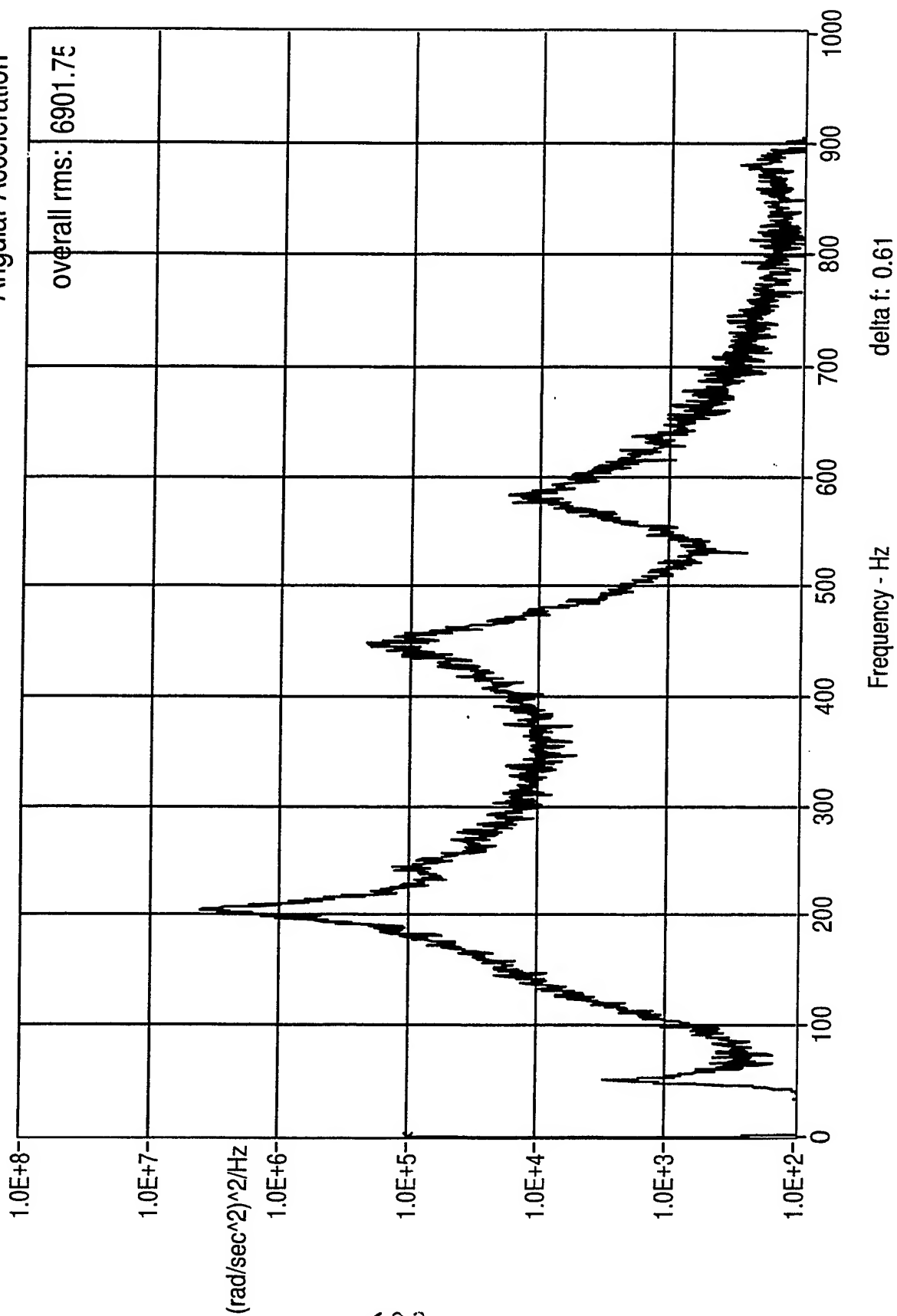
F-15 TPN\_3267: q=30 alpha=20 beta=4 bp=0



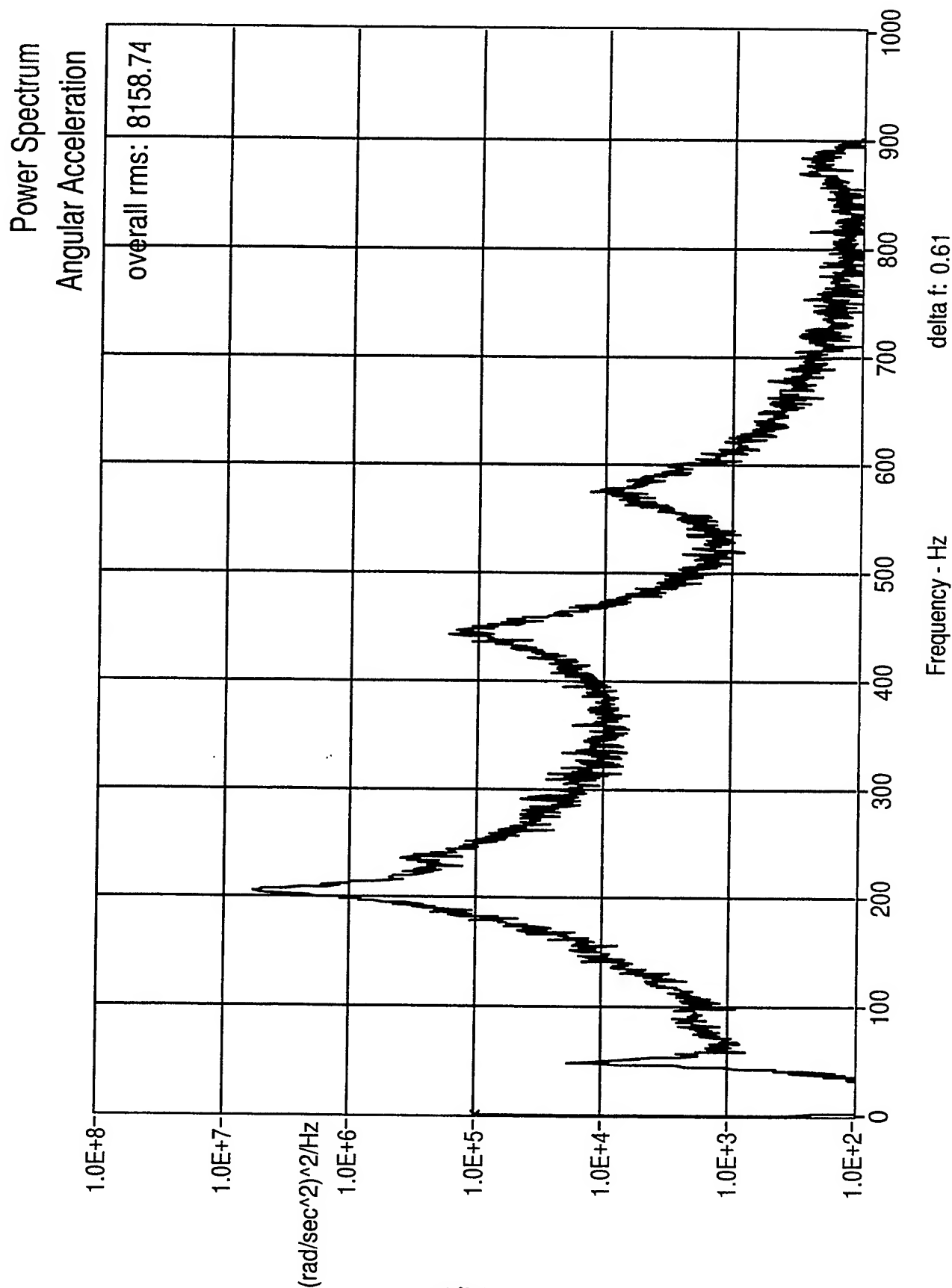
F-15 TPN\_3269: q=30 alpha=24 beta=4 bp=0

Power Spectrum

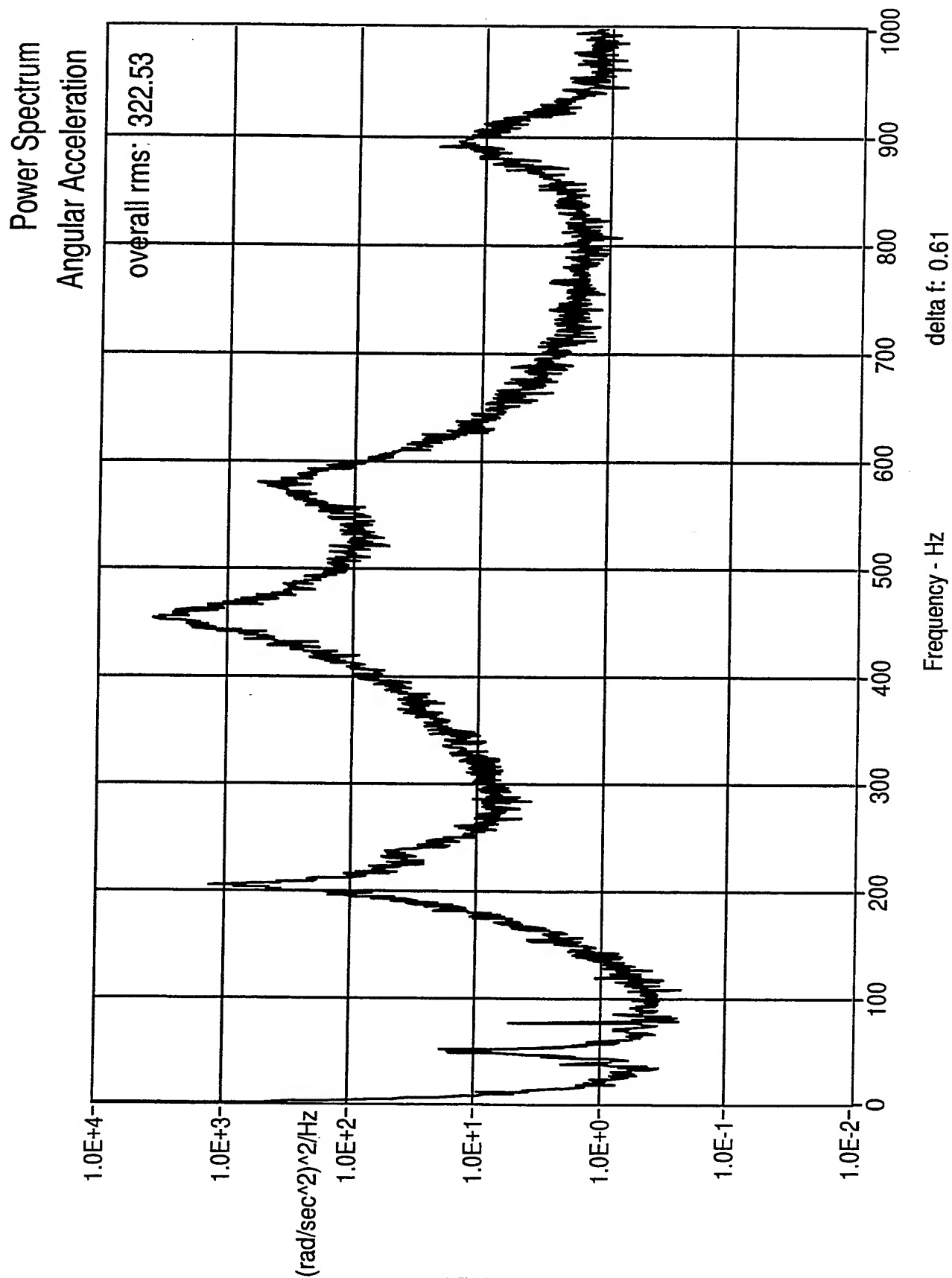
Angular Acceleration



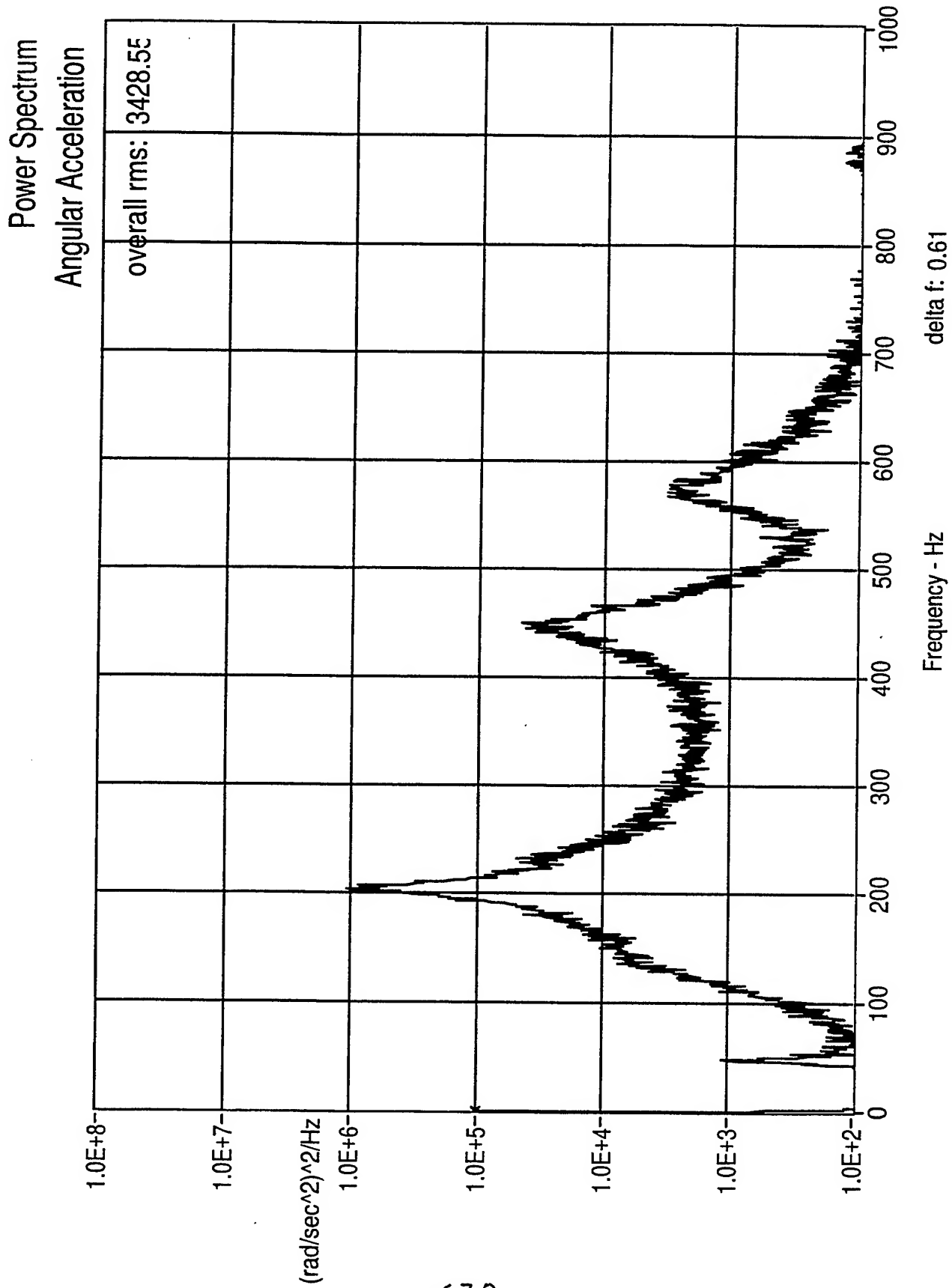
F-15 TPN\_3271: q=30 alpha=32 beta=4 bp=0



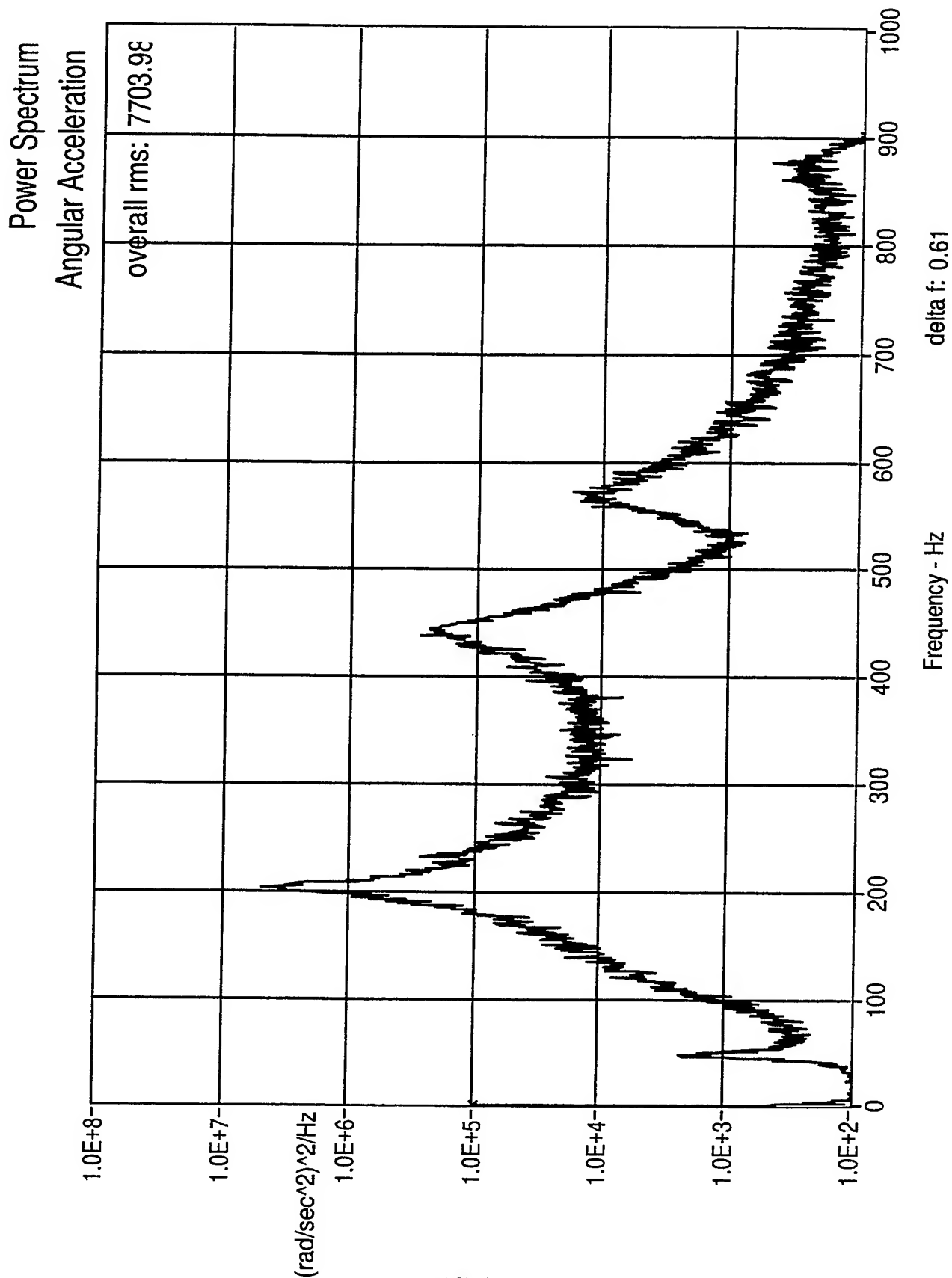
F-15 TPN\_3297: q=30 alpha=8 beta=0 bp=45



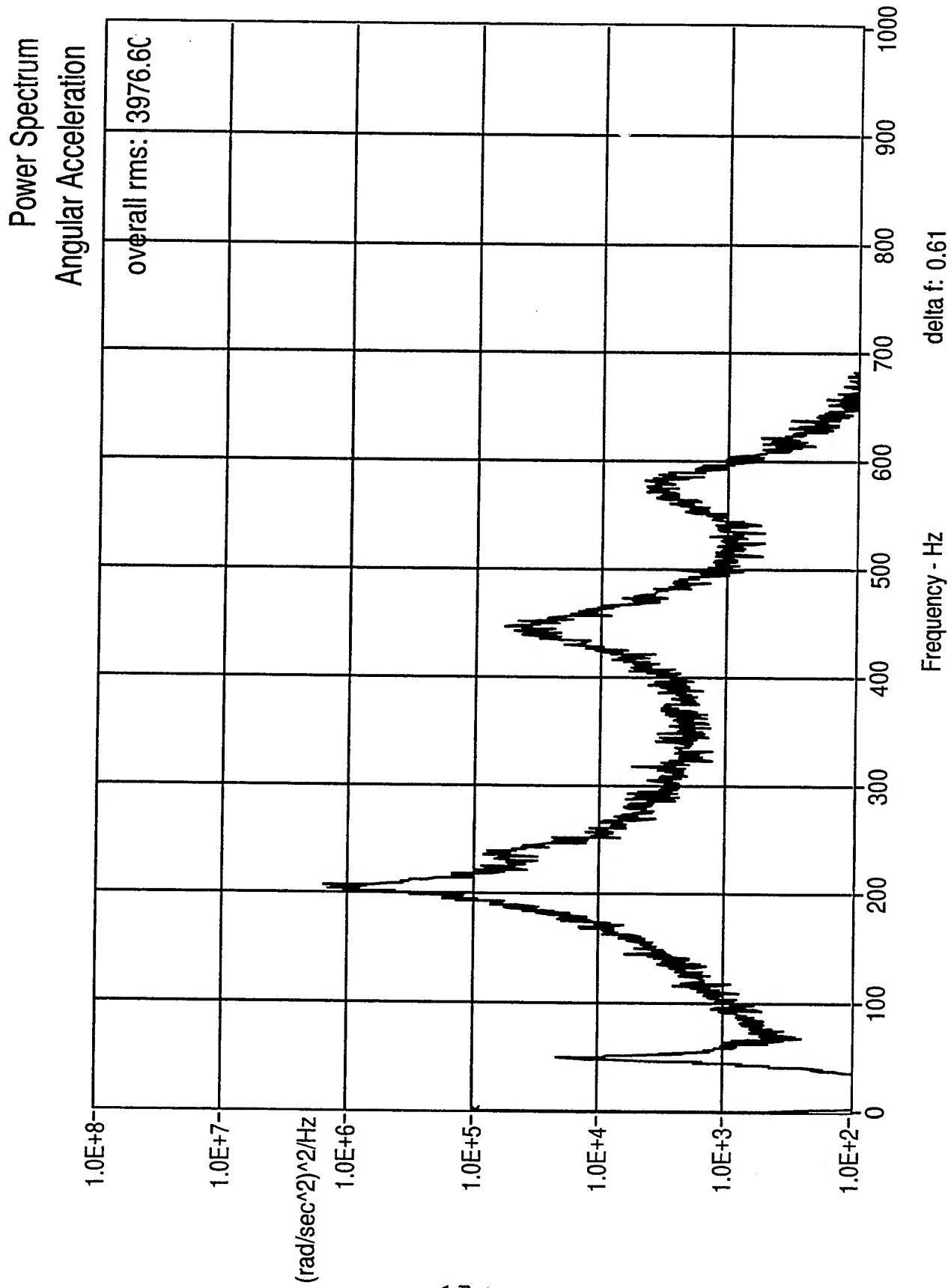
F-15 TPN\_3303: q=30 alpha=20 beta=0 bp=45



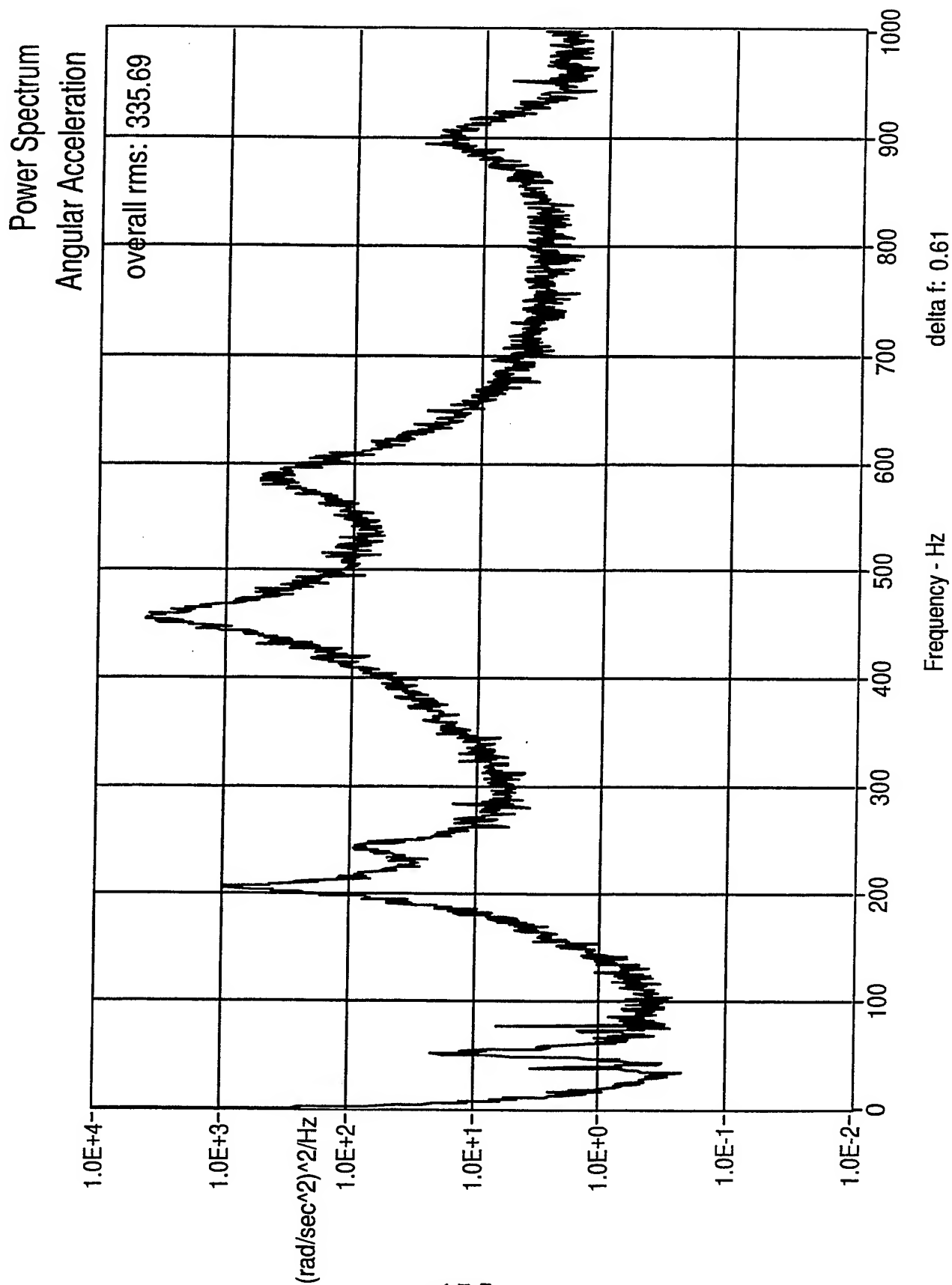
F-15 TPN\_3305: q=30 alpha=24 beta=0 bp=45



F-15 TPN\_3307: q=30 alpha=32 beta=0 bp=45

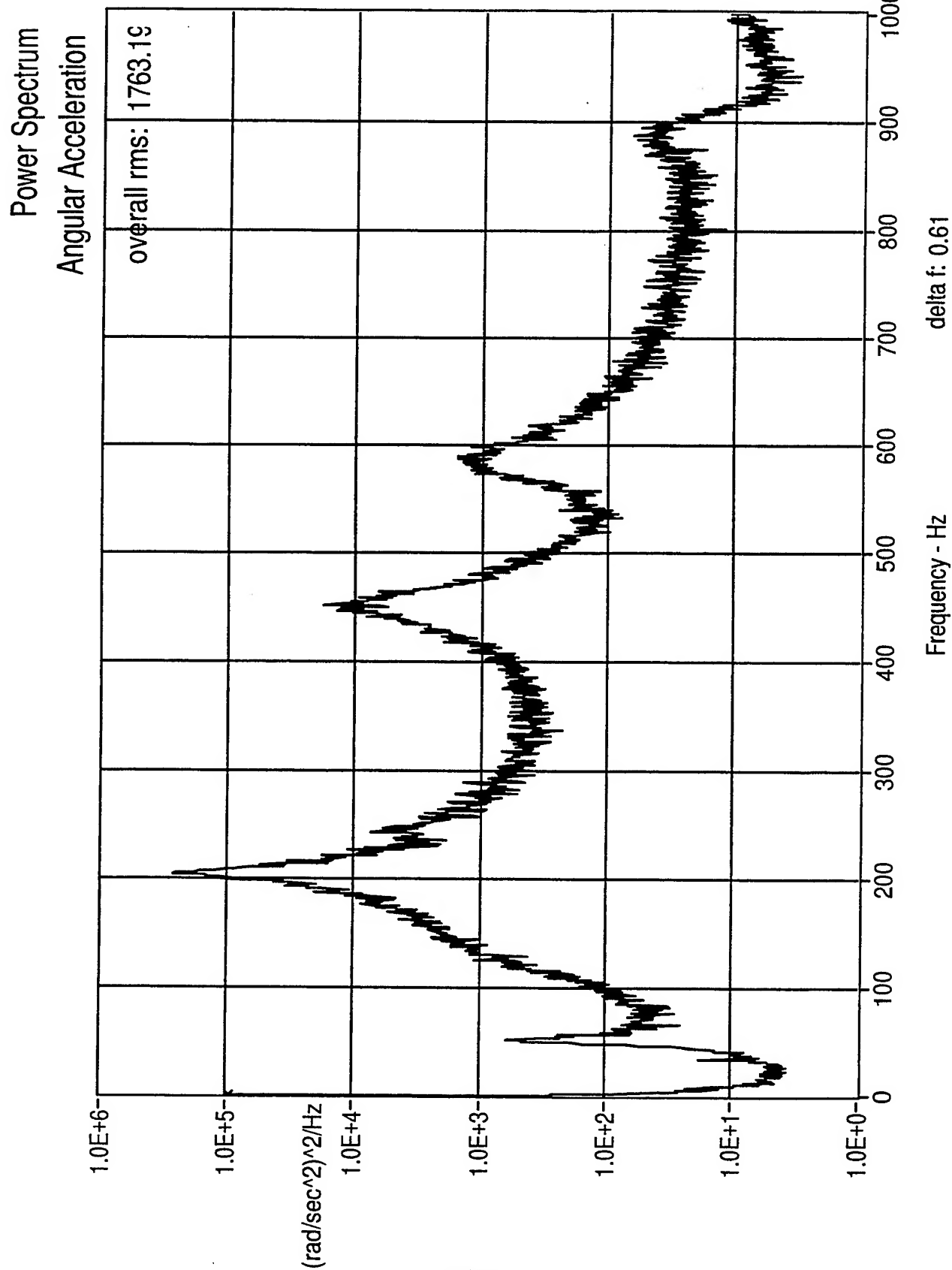


F-15 TPN\_3315: q=30 alpha=8 beta=4 bp=45

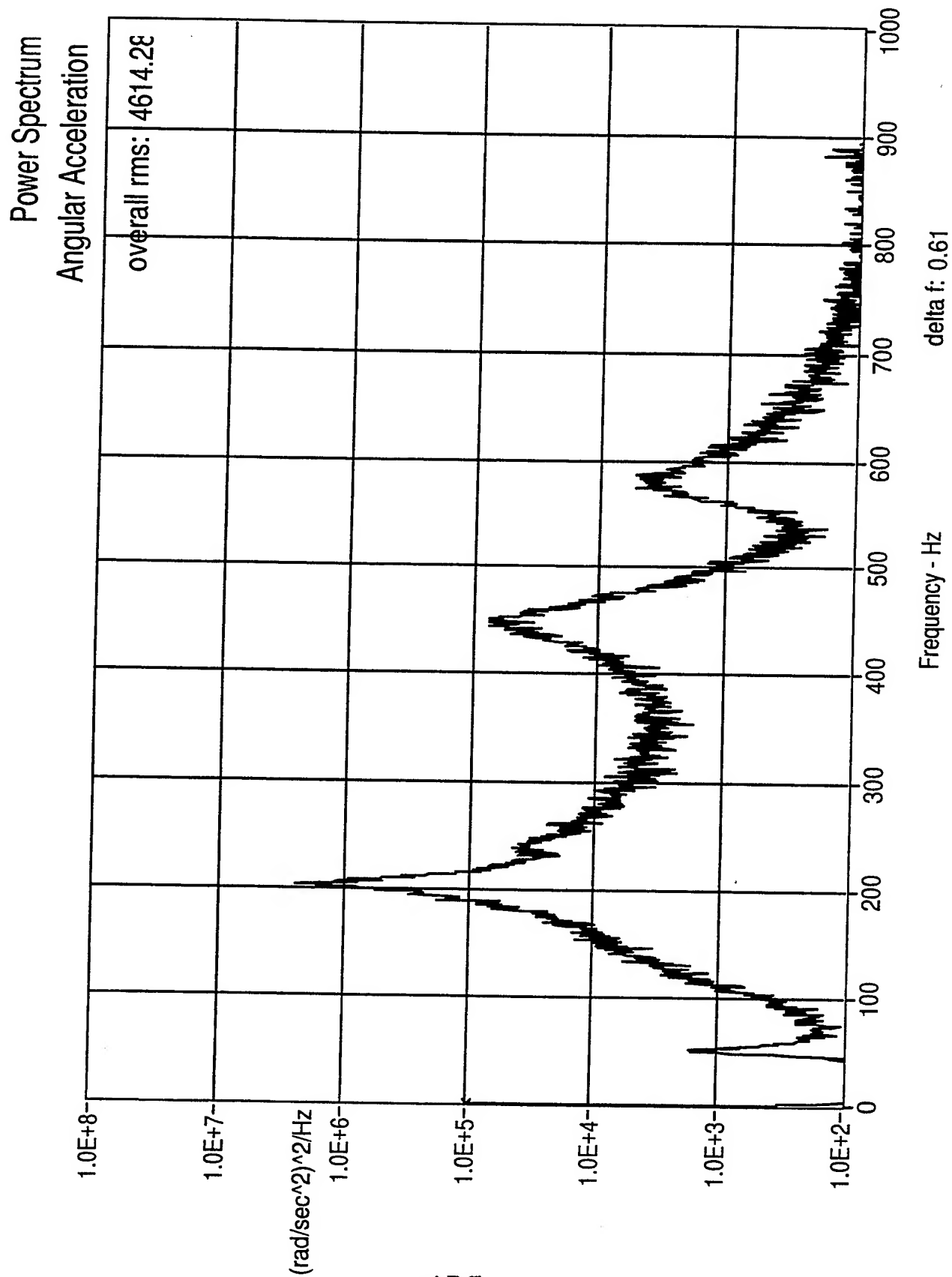




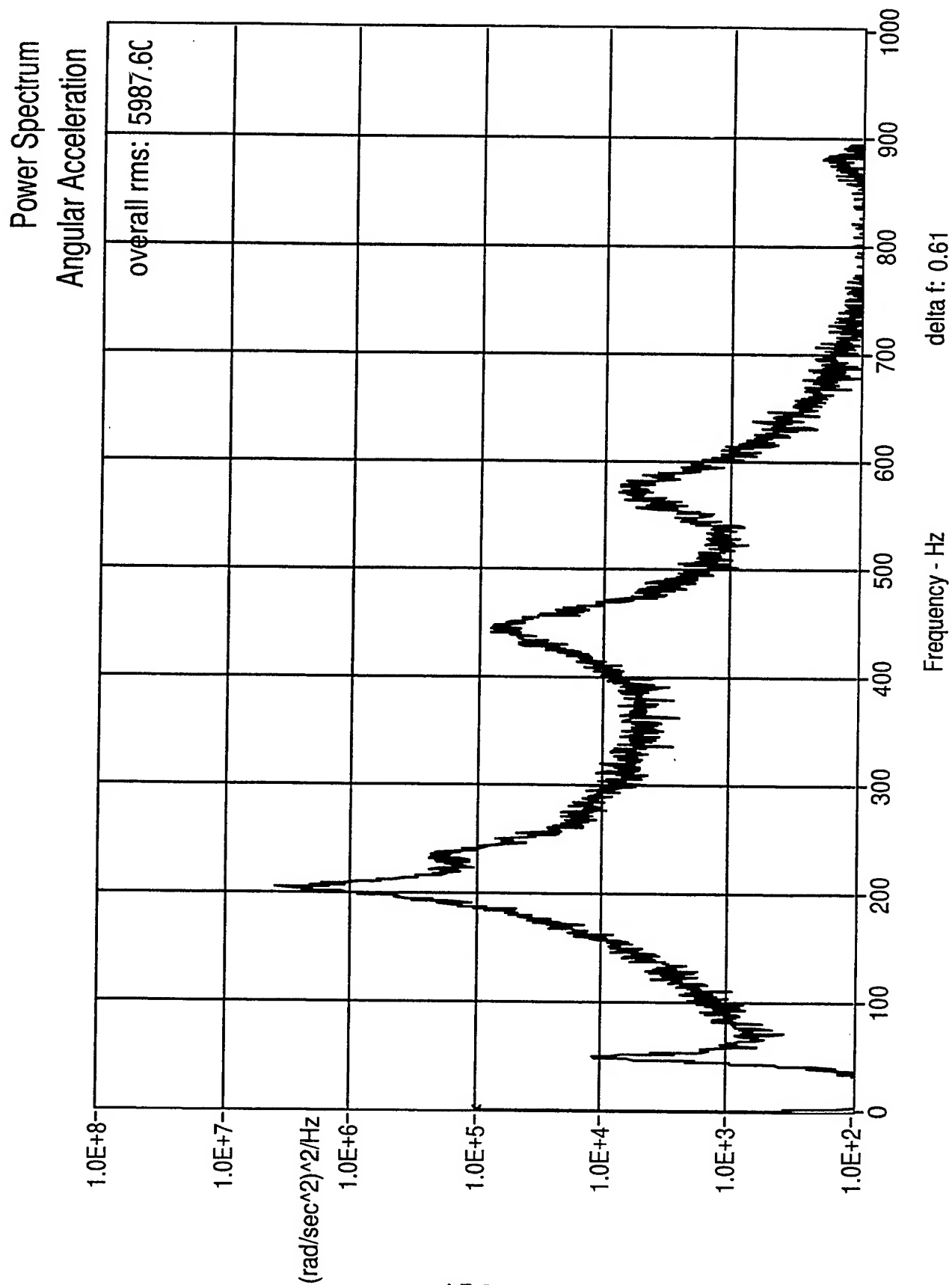
F-15 TPN\_3321: q=30 alpha=20 beta=4 bp=45



F-15 TPN\_3323: q=30 alpha=24 beta=4 bp=45



F-15 TPN\_3325: q=30 alpha=32 beta=4 bp=45



**FLEXIBLE TAIL RESPONSE  
ACCELERATION DATA  
FLEXIBLE TAIL RESPONSE  
ACCELERATION DATA**

**4.2 RMS SUMMARY TABS , Q = 30, 56 PSF, ALPHAS = 8, 20, 24, 32 DEG,  
BETA = 0, +4, -4 Deg, WBP = 0, 45, 65\* psi**

**\* only for Q=56**

F-15 Vertical Tail Buffet Test: Overall RMS of acceleration data (g, 1-1000 Hz)

0 psi blowing pressure:

Beta = -4:

		Q = 56 psf			
		fwd	aft	linear	angular
Alpha:	8	1.85	2.36	1.67	410.6
	20	55.51	45.66	21.70	13558.6
	24	60.42	44.25	24.60	13671.1
	32	25.09	33.74	23.21	5892.8

Beta = 0:

		Q = 56 psf			
		fwd	aft	linear	angular
Alpha:	8	1.93	2.35	1.67	421.7
	20	38.08	32.52	15.46	9430.8
	24	73.06	54.40	26.06	17226.3
	32	30.35	41.03	28.11	7180.3

		Q = 30 psf			
		fwd	aft	linear	angular
	8	1.63	1.44	1.08	323.1
	20	19.52	16.86	6.70	5032.0
	24	42.17	33.12	16.84	9975.2
	32	19.37	21.27	14.84	4291.4

Beta = 4:

		Q = 56 psf			
		fwd	aft	linear	angular
Alpha:	8	1.60	1.95	1.39	348.7
	20	20.41	17.28	7.79	5098.7
	24	59.10	45.49	21.26	14157.9
	32	46.97	49.83	34.08	10431.4

		Q = 30 psf			
		fwd	aft	linear	angular
	8	1.43	1.33	.96	296.5
	20	9.03	7.54	3.38	2246.8
	24	28.22	22.55	10.15	6901.8
	32	33.99	34.26	20.72	8158.7

45 psi blowing pressure:

Beta = -4:

		Q = 56 psf			
		fwd	aft	linear	angular
Alpha:	8	2.87	2.77	1.87	629.1
	20	49.07	42.84	18.95	12455.9
	24	75.22	61.12	29.26	18261.6
	32	30.57	38.61	27.31	6783.8

Beta = 0:

		Q = 56 psf			
		fwd	aft	linear	angular
Alpha:	8	2.35	2.57	1.78	519.9
	20	37.05	33.75	13.30	9790.2
	24	77.34	60.09	27.94	18605.6
	32	39.71	46.57	32.12	8950.6

		Q = 30 psf			
		fwd	aft	linear	angular
	8	1.59	1.36	1.00	322.5
	20	13.29	12.35	5.71	3428.6
	24	31.39	25.83	12.02	7704.0
	32	18.34	19.96	14.04	3976.6

Beta = 4:

		Q = 56 psf			
		fwd	aft	linear	angular
Alpha:	8	2.52	2.66	1.83	556.9
	20	19.82	16.87	6.88	5056.5
	24	52.55	42.32	19.47	12831.2
	32	53.22	57.41	39.27	11859.7

		Q = 30 psf			
		fwd	aft	linear	angular
	8	1.65	1.39	1.01	335.7
	20	7.26	6.32	3.30	1763.2
	24	18.74	15.44	7.10	4614.3
	32	25.09	28.12	18.05	5987.6

65 psi blowing pressure:

Beta = -4:

		Q = 56 psf			
		fwd	aft	linear	angular
Alpha:	8				
	20	54.10	46.60	20.36	13693.0
	24	75.18	58.11	28.78	17806.4
	32				

Beta = 0:

		Q = 56 psf			
		fwd	aft	linear	angular
Alpha:	8				
	20	43.68	38.60	15.38	11364.8
	24	83.28	63.76	28.84	20042.1
	32				

Beta = 4:

		Q = 56 psf			
		fwd	aft	linear	angular
Alpha:	8				
	20	23.71	20.02	8.02	6044.7
	24	59.50	46.16	20.77	14398.3
	32				